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SEROLOGIC SIGNIFICANCE OF STREPTOCOCCI IN ARTHRITIS AND ALLIED CONDITIONS *

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The first conclusive tests in the application of the complement fixation reaction to the diagnosis of certain infective diseases were made by Bordet and Gengou as early as 1901. Their work was primarily on experimental typhoid infection in animals. Since that time its field of usefulness has been extended to the diagnosis of chronic gonorrhea (Muller and Oppenheim, Schwartz and McNeil), glanders (Schutz and Schubert, Miessner and Trapp), tuberculosis (McIntosh and Fildes, Miller and others), typhoid fever (A. Pijper, Hadjopoulos), plague and pertussis (Bordet and Gengou).

That streptococcus complement fixing bodies could be detected in the blood of patients suffering from bacterial endocarditis was demonstrated by Major,[1] Kinsella[2] and Stone.[3] The earliest studies of the serologic relationship of the streptococci to infective arthritis were done by Hastings,[4] who, to our knowledge, first demonstrated streptococcic complement deviation by the old Wassermann technic. This work was later taken up by Swift and Thro,[5] Richards[6] and others.

Working on similar lines since 1917, we have repeated the work of these investigators. We were, however, disappointed by the inconstancy of our findings. This was due primarily to the inadequacy of our streptococcus antigen (a single strain of *S. viridans* obtained from Hastings). Another fact of equal importance was the deleterious effect of heat on antibodies in the process of inactivating serums. By the application of a special active serum technic already used by one of us in syphilis[7] and the choice of polyvalent antigens, we think we have surmounted some of the difficulties that confronted previous workers. The result is a method of sufficient sensitiveness and specificity for the serologic study of infective arthritis and allied pathologic conditions.

The investigation has been conducted with two objectives, (1) the diagnostic and (2) the therapeutic. The present article is confined to the details of the general diagnostic test. The therapeutic results will be considered in a subsequent communication.

TECHNIC

The blood is obtained as for the Wassermann test in a chemically clean, preferably sterile, test tube, and left at room temperature until the serum starts to separate from the clot. It is then kept in the icebox over night. The following day the serum is separated from the clot and centrifugalized long enough to free it of all formed elements.

The clear active serum is first titrated for its hemolytic (complementary) value by pipetting into five tubes in increasing amounts, from 0.01 to 0.05 c.c. In addition, each tube receives 0.5 c.c. of saline solution and 0.5 c.c. of 0.5 per cent. suspension of sensitized sheep cells. The tubes are now shaken and left in the water bath at 37 C. for thirty minutes. The least amount of serum that gives clear hemolysis is considered the unit complementary titer of that particular serum.

As we have more than one antigen in the actual test, a set of four tubes is arranged for each antigen. In addition, another set of four tubes is arranged for the final complementary control. The respective tubes in each set receive the same amount of serum. The titration limits for the serum depend on its preliminary hemolytic titer. If, for example, this titer is at 0.01 c.c., the tubes receive 0.01, 0.02, 0.03 and 0.04 c.c., respectively; if at 0.02 c.c., then 0.02, 0.04, 0.06 and 0.08 c.c. The underlying idea in thus distributing the serum is to obtain a quantitative reading of fixation in terms of hemolytic units.

Next in order, each set receives 0.5 c.c. of the respective antigen, except the hemolytic control set, to which 0.5 c.c. of the saline solution is added instead. After shaking, the tubes are placed in the water bath at 37 C. for one hour, and while in the bath, at the end of incubation, 0.5 c.c. of 0.5 per cent. sensitized sheep cell suspension is added to each tube. As soon as the hemolysis in the control tubes approaches the previous hemolytic titer, the racks are removed from the bath and readings are taken. The hemolytic titer in the test proper, as the result of the longer incubation, sometimes runs slightly lower than in the preliminary test. This does not in any way vitiate our actual findings, in which the final hemolytic titer is taken as the basis of our readings. Table 1 is a facsimile of one of our actual readings.

The final hemolytic titer of this serum was at a trifle over 0.01 c.c., but not over 0.015 c.c. The quotient of the antigenic over the hemolytic titers gives

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1. Major: Bull. Johns Hopkins Hosp. 23:326, 1912.
2. Kinsella, R. A.: Bacteriologic Studies in Subacute Streptococcus Endocarditis, Arch. Int. Med. 19:367 (March) 1917.
3. Stone, G. K.: Brit. J. Exper. Path. 4:318 (Dec.) 1923.
4. Hastings, T. W.: Complement Fixation Tests for Streptococcus, Gonococcus and Other Bacteria in Infective Deforming Arthritis and Arthritis Deformans, J. A. M. A. 60:1208 (April 19) 1913.
5. Swift, H. F., and Thro, W. C.: A Study of Streptococci with the Complement Fixation and Conglutination Reactions, Arch. Int Med. 7:24 (Jan.) 1911.
6. Richards, J. H.: J. Bacteriol. 5:511 (Sept.) 1920.
7. Hadjopoulos, L. G.: J. M. Res. 43:455 (Aug.-Oct.) 1922.

the unit fixing values in respect to each antigen, as will be seen under the final column.

Antigens.—The antigens used in these tests were polyvalent bacterial suspensions, in 1 per cent. phenol (carbolic acid) saline solution, of various pathogenic micro-organisms as listed in our tables. These were, for the most part, derived from positive blood cultures.

TABLE 1.—*Bacterial Complement Fixation, Case 76* *

	Extent of Hemolysis				
Amount of serum, C.c.	0.04	0.03	0.02	0.01	Quantitative Readings
Preliminary hemolytic titer	c	c	c	c	H. T. 0.01
Final hemolytic titer	c	c	c	1	0.015
Antigens					
Streptococcus viridans	3.	3	3	3	+++
Streptococcus hemolyticus	3	3	3	3	++++
Streptococcus stool	3	3	3	3	++++
B. coli-communis, coli-communior	c	c	c	3	Negative
Gonococcus, Torrey strains	c	c	c	2	Negative
Wassermann reaction	c	c	c	1	Negative

* In this table, c stands for complete hemolysis; 3, for complete fixation; 2., for very faint trace of hemolysis; 2, for 50 per cent. hemolysis; 1, for 75 per cent. hemolysis; each + indicates a unit fixation.

In our experience, strains of micro-organisms isolated from acute localized infections or fatal generalized septicemias were found to contain more of the group than of the individual antigenic properties, and consequently were better adapted for this type of work. Their therapeutic application as vaccine is limited on account of their extreme toxicity.

Preparation of Antigens.—In the case of streptococci, single colonies were fished in the primary growth, after their blood altering properties were determined; and these colonies were transferred to 25 c.c. of 1 per cent. neutral glucose broths prepared from beef heart muscle and incubated for three or four days. After the sedimentation of the growth was almost complete, the broth was decanted and the sediment transferred into 25 c.c. sterile centrifuge tubes and washed with sterile saline solution four or more times until it was broth free. The final sediment was suspended in 10 c.c. of 1 per cent. phenol saline solution, and 0.5 c.c. of a 1:50 dilution of this constituted our arbitrary antigenic unit to be titrated for its hemolytic, anticomplementary and specific values.

The same procedure was applied for the colon bacillus antigen, with the exception that it was grown on agar slants and comprised various strains of both *B. coli-communis* and *B. coli-communior*. For gonococcus, the various strains isolated by Torrey were used.

Standardization of Antigens.—In collecting negative serums for the standardization of our streptococcus antigens, special care was taken to eliminate such cases as might be infected from some masked focus, such as abscessed teeth, tonsillitis, sinusitis, bronchitis and prostatitis. Aside from this, the procedure of our antigen titrations was nothing more than the actual application of our technic, as already described, to determine their anticomplementary titers. As for their hemolytic properties, they were already lost in the process of culturing in sugar mediums. In our experience, this particular property of streptococci was never a source of difficulty. Table 2 will serve as an example of the titration of antigens. The anticomplementary titer of this particular antigen was at 0.5 c.c. of the 1:50 dilution used. One half of the anticomplementary titer for the standard dose of 0.5 c.c. would therefore be in a dilution of 1:100.

As the result of more than a thousand complement fixation reactions, using this technic with various strains of streptococci as antigens, we have made a serologic classification of infective arthritides. This classification embraces arthritic and rheumatoid conditions that always have been loosely classified, and, from the serologic point of view, divides them into three clinical entities: (1) exudative periarthritis, isoatrophic in type; (2) exudative periarthritis, anisoatrophic in type, and (3) productive ostearthritis, hypertrophic in type.

TYPE 1.—ACUTE OR SUBACUTE EXUDATIVE PERIARTHRITIS

This group takes in the acute and subacute exudative periarthritides and embraces such conditions as acute or subacute rheumatic fever, acute and subacute bursitis, with which is frequently associated radiating neuralgic pain, acute and subacute synovitis and tenosynovitis, infective myositis, myalgic nodules, true lumbago and similar allied conditions. This type of case, if arrested or cured, leaves no bony overgrowth, and the affected periarticular tissues usually return to normal. The clinical findings are acute or subacute local inflammatory changes or painful swelling, with or without redness. There is tenderness to pressure with or without local heat, and usually there is present a protective muscular contraction, giving limitation of motion that frequently leads to muscle atrophy. In this type, there is no bony change except such rarefaction as may come from disuse. The age incidence of this form is from childhood to late middle age. It is comparatively rare in advanced years.

This type, as will be seen in Table 3, was found serologically to effect complement fixation in strains of hemolytic streptococci without a single exception. Evidently, in this group *Streptococcus viridans* does not play any serologic rôle, except when later in the course of the infection bony productive changes occur. This bony overgrowth may then be demonstrated by roentgen ray, and by the elicitation of fine or coarse crepitus. In Table 3, we have included a few beginning productive arthritides (serologically *S. viridans*), in which, in the main, the pathologic condition was serous (hemolytic).

TYPE 2.—ANISO-ATROPHIC EXUDATIVE PERIARTHRITIS (ARTHRITIS DEFORMANS)

Under the grouping of aniso-atrophic exudative periarthritis we find the cases commonly classed as arthritis deformans. This is a form characterized by atrophic

TABLE 2.—*Titration of Antigen to Determine the Proper Dilution in a Standard Dose of 0.5 C.c.* *

	Complement Controls		Antigenic Titration					
Pooled negative serums: complement titer 0.02 c.c.	0.02	0.04	0.04	0.04	0.04	0.04	0.04	
Antigen, 1:50 dilution, amount, c.c.			0.10	0.20	0.30	0.40	0.50	
Physiologic sodium chlorid solution, amount, c.c.			0.50	0.50	0.40	0.30	0.20	0.10
Sensitized cells after one-half hour incubation			0.50	0.50	0.50	0.50	0.50	0.50
Readings with 0.02 c.c. comp. cont. clear	c	c	c	c	c	c	c	2

* In the table, c stands for complete hemolysis and 2 for 50 per cent. fixation, as in Table 1.

changes in the muscles, due to inflammatory conditions in the periarticular structures, leading to muscular imbalance and deformity with contraction of the flexors throughout the body and abduction deformity of the hands and feet. This clinical picture is of great diagnostic significance, as it differentiates Type 1 from Type 2 of our classification. In the latter the soft tissue changes, being of the iso-atrophic nature, do

not lead to muscular imbalance, the main, if not the only cause of deformity.

The conception that the so-called deformans type is not to be entirely dissociated from the first group, and yet is sufficiently different to demand a separate classification, is borne out by our serologic findings, as shown in Table 4. The clear cut aniso-atrophic type is a definitely hemolytic fixation, as was the acute exudative periarthritis. Similarly, the appearance of *S. viridans* fixation follows the productive changes that lead to crepitus and ankylosis. Nevertheless, there is tory antigens for these cases. The foci from which the most satisfactory antigens were obtained were tonsillar, prostatic and intestinal in origin.

TYPE 3.—SUBACUTE OR CHRONIC PRODUCTIVE OSTEARTHRITIS (HYPERTROPHIC ARTHRITIS)

The third form comprises a group of arthritic conditions differentiating itself from the previous groups by the production of bony overgrowth, frequently coupled with a certain amount of destruction, which may or may not lead to true ankylosis. For

TABLE 3.—*Bacterial Complement Fixation Tests in Acute Exudative Periarthritis**

Case	Age	Type of Arthritis	Streptococcus Viridans	Streptococcus Hemolyticus	Gonococcus Torrey Strain	Streptococcus Stool	B. Coli-Communis, Commonlor	Wassermann Test	Response to Treatment
42	28	Acute exudative periarthritis	—	++++	0	+++	0	—	++
52	15	Acute exudative periarthritis	—	++++	0	++++	3	—	++
60	47	Acute exudative periarthritis	—	+	0	±	0	—	?
71	28	Acute exudative periarthritis	—	++	0	+++	0	—	+
73	63	Acute exudative periarthritis	—	++	—	—	0	—	+
78	44	Acute exudative periarthritis	—	++	—	+	3	—	0
79	35	Acute exudative periarthritis	—	++++	—	+	0	—	++
88	..	Acute exudative periarthritis	—	++	—	+	—	—	0
91	49	Acute exudative periarthritis	—	+	—	—	—	—	—
92	24	Acute exudative periarthritis	—	++	—	+	—	—	+
95	20	Acute exudative periarthritis	—	++	—	+	++	—	+
98	40	Acute exudative periarthritis	—	++	—	—	—	—	+
99	34	Acute exudative periarthritis	—	++++	—	+	—	—	++
101	..	Acute exudative periarthritis	—	++	—	+	—	—	0
114	28	Acute exudative periarthritis	—	++	—	++++	++	—	++
170	39	Acute exudative periarthritis	—	—	—	—	—	—	—
180	29	Acute exudative periarthritis	—	++	—	—	—	—	+
206	39	Acute exudative periarthritis	—	+	—	+	—	—	—
212	45	Acute exudative periarthritis	—	+	—	—	—	—	—
230	25	Acute exudative periarthritis	—	+	—	—	—	—	—
76	35	Acute exudative periarthritis and hypertrophy	++	++++	—	+++	—	—	+
104	28	Acute exudative periarthritis and hypertrophy	+	++++	—	+	++++	—	++
113	49	Acute exudative periarthritis and hypertrophy	++	++	—	+++	—	—	0
118	40	Acute exudative periarthritis and hypertrophy	++	+	—	++++	++++	—	++
120	40	Acute exudative periarthritis and hypertrophy	+	++++	—	++++	++++	—	0
134	24	Acute exudative periarthritis and hypertrophy	++++	+	—	++++	++++	—	++
168	27	Acute exudative periarthritis and hypertrophy	+	++++	—	++++	—	—	++
184	34	Acute exudative periarthritis and hypertrophy	+	+	—	—	—	—	+
217	45	Acute exudative periarthritis and hypertrophy	++	+	—	—	—	—	0

* In the tables, under the last column, ++ stands for excellent response to treatment, + satisfactory, ? doubtful and — no response. The readings in pluses under the fixation columns are quantitative, each plus sign standing for one unit of complement fixed; negative fixations are designated with a dash; 0 denotes fixation not done or cases not followed.

TABLE 4.—*Bacterial Complement Fixation Tests in Aniso-Atrophic Exudative Arthritis (Arthritis Deformans)*

Case	Age	Type of Arthritis	Streptococcus Viridans	Streptococcus Hemolyticus	Gonococcus Torrey Strain	Streptococcus Stool	B. Coli-Communis, Commonlor	Wassermann Test	Response to Treatment
87	..	Pure deformans	—	++++	—	—	++++	—	+
89	..	Pure deformans	—	+++	—	—	++++	—	+
69	..	Pure deformans	—	+++	—	—	—	—	++
61	..	Pure deformans	—	++++	—	—	+	—	—
Alt.	..	Pure deformans	—	+	—	—	—	—	—
Dor.	..	Pure deformans	—	++++	—	—	—	—	0
72	24	Pure deformans	—	—	—	—	—	—	?
80	55	Pure deformans	—	—	—	—	—	—	—
97	50	Pure deformans	—	++	—	+	—	—	+
100	38	Pure deformans	—	++	—	—	—	—	++
127	28	Pure deformans	—	—	—	—	—	—	?
167	64	Pure deformans	—	—	—	—	—	—	?
200	46	Pure deformans	—	—	—	—	—	—	0
70	48	Deformans and hypertrophy	+	++++	—	+++	+	—	++
125	60	Deformans and hypertrophy	++	++	—	—	++	—	0
133	48	Deformans and hypertrophy	+++	++	—	++++	+++	—	0
140	64	Deformans and hypertrophy	++++	++++	—	++++	++++	—	++
165	60	Deformans and hypertrophy	+	++	—	—	—	—	+
210	54	Deformans and hypertrophy	++	+	—	+	—	—	0
224	..	Deformans and hypertrophy	+	+	—	+	—	—	0
215	52	Deformans and hypertrophy	++++	++	—	++++	—	—	0

apparently considerable serologic difference in the strains of hemolytic streptococcus causing the first type and that causing the second, for we have found only a few selective strains that gave complement deviations in deformans cases, whereas it was relatively easy to obtain fixation with numerous arthritic focal strains in the first type of case.

As will be noted in Table 4, some of the early deformans cases gave no response to our serologic tests. Therefore, it became necessary to make an intensive study of all obtainable cultures from the aniso-atrophic type, in an endeavor to secure satisfac- the most part, this condition in its pure form is a late life manifestation. It is frequently the end-result of a prolonged uncured periarthritis of either of the types already discussed.

Our serologic findings lead us to assume that most acute exudative arthritides gradually become chronic in character, and may eventually become hypertrophic. The hemolytic organism is usually the primary invader; and it has a tendency to lessen the local resistance of the affected parts, so as either to allow a secondary invader to take precedence in growth or, through some biochemical change, even to alter its own morphology

and become an attacker of bony instead of serous surfaces.

Clinically, the first manifestation of this change is fine crepitus, which gradually becomes coarse in character. Later there may be lipping and spurring of the find a certain number that are exclusively *S. viridans* both serologically and in clinical findings. The pure *S. viridans* type is encountered in patients who contract arthritis after forty years of age, with no previous history of rheumatoid attack.

TABLE 5.—*Bacterial Complement Fixation Tests in Subacute or Chronic Productive (Hypertrophic) Arthritis* *

Case	Age	Type of Arthritis	Streptococcus Viridans	Streptococcus Hemolyticus	Gonococcus Torrey Strain	Streptococcus Stool	B. Coli-Communis, Communior	Wassermann Test	Response to Treatment
91	35	Subacute productive	+++	–	–	–	–	–	+
129	57	Subacute productive	+	–	–	++++	++++	–	0
153	..	Subacute productive	+	–	–	–	++	–	+
158	50	Subacute productive	+	–	–	+	++	–	?
159	60	Subacute productive	+	–	–	–	–	–	?
162	48	Subacute productive	++	–	–	++	++	–	++
192	..	Subacute productive	–	–	–	–	–	–	++
197	..	Subacute productive	++	–	–	–	–	–	0
202	..	Subacute productive	–	–	–	–	+	–	0
220	42	Subacute productive	++	–	–	–	–	–	++
223	55	Subacute productive	–	–	–	+	–	–	+
49	47	Subacute productive and acute exudative	++++	+	–	++++	0	–	0
89	28	Subacute productive and acute exudative	++	+++	–	+++	–	–	++
109	55	Subacute productive and acute exudative	++	+	–	–	–	–	++
121	61	Subacute productive and acute exudative	+	+	–	++++	+	–	++
161	30	Subacute productive and acute exudative	++	++	–	–	–	–	++
163	89	Subacute productive and acute exudative	+	+	–	–	–	–	+
171	62	Subacute productive and acute exudative	+++	+	–	+	++	–	++
177	55	Subacute productive and acute exudative	++	++	–	–	–	–	++
182	48	Subacute productive and acute exudative	++	+	++	–	–	–	++
183	50	Subacute productive and acute exudative	++	+	+	+	–	–	0
189	37	Subacute productive and acute exudative	++	++	–	++	–	–	++
205	61	Subacute productive and acute exudative	+	++	–	+	–	–	++
216	49	Subacute productive and acute exudative	+	+	–	–	–	–	++
227	65	Subacute productive and acute exudative	+	+	–	–	–	–	+

* Cases 182 and 183 gave a history of chronic gonorrhea.

TABLE 6.—*Bacterial Complement Fixation Tests in Miscellaneous Pathologic Conditions with Focal Infections, Including Normal Control Cases*

Case	Clinical Condition	Streptococcus Viridans	Streptococcus Hemolyticus	Streptococcus Stool	Pneumococcus	Staphylococcus Aureus	Gonococcus Torrey Strain	B. Coli-Communis, Communior	Wassermann Test
5	Scarlatina	++++	++++	–	–	–	0	0	–
34	Scarlatina	+	++++	+	+	++	0	–	–
35	Scarlatina	++++	++++	++++	++++	++++	0	++++	–
41	Scarlatina	–	++++	++++	++++	0	0	0	–
45	Scarlatina	–	+++	+	–	0	0	0	–
46	Scarlatina	–	+	+	–	0	0	0	–
50	Scarlatina	–	+	++	–	0	0	0	–
51	Scarlatina	–	++++	++++	+	0	0	0	–
56	Scarlatina	–	+	+	–	0	0	0	–
57	Scarlatina	–	++++	++++	–	0	0	0	–
58	Scarlatina	–	++++	++++	++++	0	0	0	–
59	Scarlatina	–	+++	+++	++++	0	0	0	–
64	Scarlatina	–	++	–	++++	0	0	0	–
65	Scarlatina	–	+	–	–	0	0	0	–
69	Scarlatina	–	+	–	–	0	0	0	–
92	Acute tonsillitis	–	++++	+	–	–	–	–	–
181	Acute tonsillitis	–	–	–	++	–	–	–	–
180	Acute tonsillitis	–	++	–	–	–	–	–	–
207	Acute tonsillitis	–	+	–	–	–	–	–	–
115	Acute tonsillitis	–	–	++	–	–	–	+	–
145	Acute sinusitis	–	–	–	+	++++	–	–	–
179	Acute sinusitis	++	+	+	++	+	–	+++	–
196	Acute sinusitis	+	+	–	+	–	–	–	–
199	Acute sinusitis	–	–	–	++	–	–	–	–
270	Acute sinusitis	+	–	–	+	–	–	–	–
Dr. R.	Acute sinusitis	–	++	+	+	++++	–	+	–
68	Bronchitis	–	++	+	+	++++	–	+	–
131	Asthma	–	++++	++++	–	++++	–	–	–
134	Asthma	++++	++	++++	++++	+	–	+++	–
172	Asthma	+	+	+	+++	–	–	++	–
213	Asthma	+	++	+	–	–	–	–	–
266	Asthma	+	+	+	–	–	–	–	–
16	Normal, control case	–	–	–	–	0	–	0	–
17	Normal, control case	–	–	–	–	0	–	0	–
36	Normal, control case	–	–	–	–	–	–	–	–
38	Normal, control case	++++	–	+++	–	++++	–	++++	–
37	Normal, control case	+++	++++	++++	+++	++++	–	++++	–
42	Normal, control case	–	–	–	–	0	0	0	–
44	Normal, control case	–	–	–	–	0	0	0	–
48	Normal, control case	–	–	–	–	0	0	0	–
106	Normal, control case	–	–	–	–	–	–	–	–
146	Normal, control case	–	–	–	–	–	++	–	–
178	Normal, control case	–	–	–	–	–	–	–	–
208	Normal, control case	–	–	–	–	–	–	–	–
263	Normal, control case	+	–	–	–	–	–	–	–
269	Normal, control case	–	–	–	–	–	–	–	–
C	Normal, control case	–	–	–	–	–	–	–	+++
852W	Normal, control case	–	–	–	–	–	–	–	–

bone, with thinning of cartilage and sometimes ankylosis. In these cases, the clinical findings have been confirmed by roentgen ray.

The serologic findings of this type, as shown in Table 5, are consequently often mixed, although we

MISCELLANEOUS CONDITIONS AND CONTROL CASES

Under the heading of miscellaneous conditions and control cases we have grouped certain focal infection cases with local or generalized symptoms, which, although they have no direct bearing on the type of

pathologic condition for which this fixation test was devised, nevertheless, might lead at times to arthritic manifestations.

In Table 6, we have included, through the courtesy of Dr. Park, fifteen cases of scarlet fever from the Willard Parker Hospital. It is significant to note the unfailing preponderance of hemolytic streptococcus in all. The stool streptococcus fixation, in our opinion, is due to the ingestion of the same bacteria from the oral cavity, and their secondary implantation in the intestine, with subsequent loss of hemolyzing power.

The next cases are acute tonsillar infections, which exhibit the same preponderance of the hemolytic and absence of the *S. viridans* deviation, again tending to show that the early and predominant invader is *S. hemolyticus*.

In the small group of sinusitis cases, the clinical diagnosis was also verified by roentgen ray. The serologic reactions in this group indicate mixed infection, with *Staphylococcus aureus* playing a not insignificant rôle. The cultures were all in accord with the serologic findings, and all cases responded favorably to autogenous vaccine therapy. In the group of bronchial asthmatic cases of the infective type, the cultural findings in every case bore out the serologic.

The last sixteen cases are supposedly normal controls. Of these, Case 146 gave a 2 plus fixation to gonococcus, owing to a chronic gonorrheal prostatitis. Cases 28 and 37, although clinically free from all absorptive foci, nevertheless gave a strong mixed fixation. These patients had never received vaccine therapy, and what the serologic reactions were due to we are unable to explain. For want of any other explanation, we called them nonspecific fixations.

SUMMARY AND CONCLUSIONS

1. In using active serum, we have developed a technic for bacterial fixations, in the main of the streptococcus types, whereby various arthritic and rheumatoid conditions may be classified serologically into three major groups.

(*a*) Arthritis reacting to hemolytic streptococci and belonging to the iso-atrophic class. This type in pure form is periarticular.

(*b*) Arthritis reacting similarly to hemolytic streptococci, but of different fixing properties. This type is aniso-atrophic or deformans.

(*c*) Arthritis reacting to streptococci of the *S. viridans type* and belonging to the ostearthritic or productive form. The bony change is often a very early manifestation in this group, and is demonstrated by crepitus and by roentgen ray.

2. The majority of arthritic cases that are not arrested or cured early in the course of the disease have a tendency to undergo further changes leading to mixed types. Thus, in an acute exudative periarthritis or in an arthritis deformans, the bony parts gradually may become involved and give rise to a mixed serologic picture. Similarly, in a chronic productive arthritic case, acute tonsillitis or some other hemolytic infection may engraft a synovial (hemolytic) flare up on a chronic hypertrophic joint.

3. A fair percentage of arthritic patients, especially those suffering from colitis and chronic constipation, have a marked tendency to effect complement fixation in certain strains of nonhemolytic streptococci isolated from the intestinal tract of similar arthritic cases. This type of organism seems to be a transition form of *Streptococcus hemolyticus*, with certain properties lost through secondary intestinal implantation.

4. Certain pathologic conditions have long been known clinically to be precursors of arthritis. Serologically, we have confirmed these clinical observations.

5. In controlling the value of the test in normal cases, the possibility of the presence of some masked focus of infection must be considered. With this point in mind, the test is not diagnostic for arthritis alone, but is diagnostic of a wide group of acute and chronic infections that give rise to antistreptococcic bodies in human serums.

52 West Fifty-Third Street—55 West Fifty-Third Street.

TYPHOID EPIDEMIC IN CHICAGO APPARENTLY DUE TO OYSTERS *

HERMAN N. BUNDESEN, M.D.
Commissioner of Health
CHICAGO

From Nov. 30, 1924, to Jan. 21, 1925, there were reported to the department of health of Chicago 129 verified cases of typhoid fever. The normal expectancy for this period, based on a previous seven-year nonepidemic average number of cases reported weekly, is thirty-three cases. A special effort was made to get all cases reported. December 9, when an excess of twenty typhoid fever cases had been reported, a postal card was sent to all physicians in the city, calling attention to the outbreak. A similar notice was printed in the *Bulletin of the Chicago Medical Society*, December 11. All hospitals in the city were telephoned to regarding the prompt reporting of cases.

The date of onset of the epidemic is given as Nov. 30, 1924, because on that date four cases were reported. During the previous week only four cases were reported. During the preceding twenty-nine days of November, seventeen cases were reported.

COURSE

The course of the epidemic is shown in Table 1, which gives the number of cases and deaths reported each week, together with the case expectancy for each week, and the epidemic index; that is, the percentage ratio of the number of cases occurring to the expected number. The table shows that the greatest number,

TABLE 1.—*Reported Typhoid Cases and Deaths in Chicago, Together with Case Expectancy and Epidemic Index, Nov. 7, 1924, to Feb. 6, 1925*

Week Ending	Cases	Deaths	Expectancy	Epidemic Index, per Cent.
Nov. 7, 1924	5	1	5	100
Nov. 14, 1924	3	1	5	60
Nov. 21, 1924	3	—	5	60
Nov. 28, 1924	4	—	5	80
Dec. 5, 1924	13	2	5	260
Dec. 12, 1924	21	4	4	525
Dec. 19, 1924	31	1	4	775
Dec. 26, 1924	15	3	4	380
Jan. 2, 1925	27	2	5	540
Jan. 9, 1925	13	—	5	255
Jan. 16, 1925	7	5	4	175
Jan. 23, 1925	10	3	4	250
Jan. 30, 1925	4	1	4	100
Feb. 6, 1925	2	—	4	50

* Owing to lack of space this article is abbreviated by omission of some of the tabular matter and of a brief historical review of oyster typhoid epidemics. The complete article will appear in the reprints, which may be obtained from the author.

namely, thirty-one cases, was reported during the week ending December 19.

DATES OF ONSET

The dates of onset of the cases reported are graphically shown in Figure 1. The date on which the patient first went to bed was considered as the definite date of onset in all these cases. This fact, together with all the other facts bearing on the epidemiology of the outbreak, was most carefully obtained from the patients by a corps of three special investigators. In instances in which the patient was delirious and the data could not be obtained at first hand, they were obtained from friends and relatives and subsequently from the patient wherever possible. All the epidemiologic data thus obtained have been rechecked by field investigators of the United States Public Health Service.

It is interesting to note that comparatively few of the cases occurred in the poorer residential parts of the city. The absence of cases in the residential district along the lake shore on the south side north of East Forty-Seventh Street, inhabited principally by colored people, is also worthy of note.

SEX AND AGE DISTRIBUTION

The sex and age distribution of the cases is shown in Table 2. Seven per cent. of the cases occurred in children under 15 years of age. In the water-borne epidemic that occurred in Chicago in 1916, 28.5 per cent. of the 105 cases reported were in children under 14 years of age, and in the water-borne epidemic in Chicago in 1923, of the 225 cases reported, 14.4 per cent. were in children under 14 years of age.

The percentage of males in the recent outbreak was 49.5. During the five nonepidemic years 1918-1922,

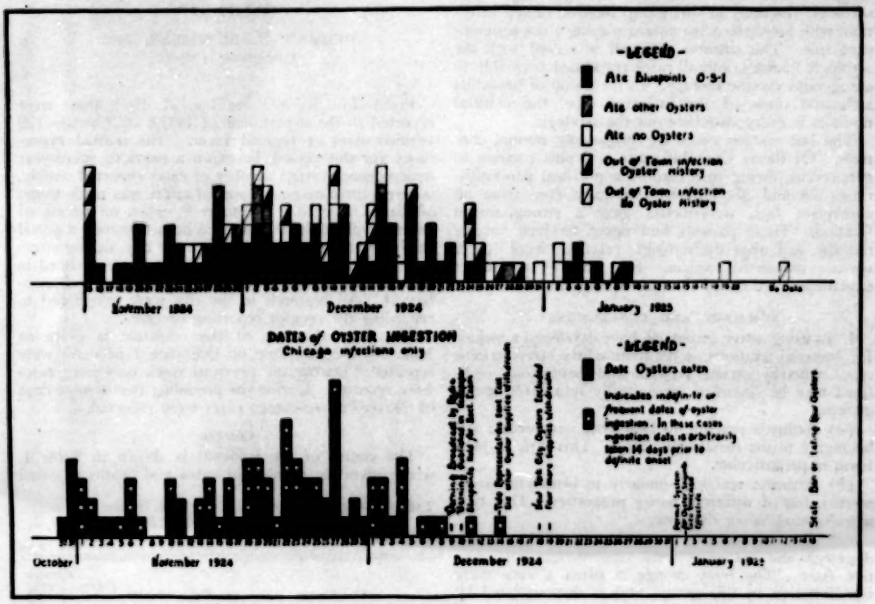

Fig. 1.—Definite dates of onset in all cases of typhoid reported at Chicago from Nov. 30, 1924, to Jan. 21, 1925.

MORTALITY

Sixteen of the 129 patients died. This is a case fatality rate of 12.4 per cent. General observations made of patients showed that the disease was more severe than usual.

GEOGRAPHIC DISTRIBUTION

The residence of the persons having typhoid fever during this outbreak is shown on the map of Chicago (Fig. 2), which map also shows the distribution of the water supply by pumping stations and lake intakes. The part of Chicago in which most of the cases were located is the best residential section; namely, the district along the lake shore on the entire north side, and, on the south side, south of East Forty-Seventh Street.

inclusive, males constituted 63.2 per cent. of the typhoid fever cases reported to the department, and each year during this period the males constituted approximately the same percentage of the cases reported, varying from 57.3 to 66 per cent.

OCCUPATION

No one occupation stands out conspicuously in this series of cases. In one instance, two patients were reported as having been employed in the same place, and these were waiters in a hotel. A review of the social status of the patients, however, shows that 88 per cent. of the number reported were classed as in comfortable or well-to-do circumstances, or persons associated with this class. Among the patients were

three merchants, a broker, a corporation president, two lawyers, five salesmen and three executive engineers.

OUT-OF-TOWN HISTORY

Twenty-three cases, or 17.8 per cent. of the 129 reported during the outbreak, gave a history indicative of probable out-of-town infection. The probable source of infection of the cases giving a history of

TABLE 2.—*Sex and Age Distribution in Cases of Typhoid Reported in Chicago from Nov. 30, 1924, to Jan. 21, 1925*

Age	Males	Percentage of All Males	Females	Percentage of All Females	Total	Percentage of All Males and Females
0- 4	1	1.6	—	—	1	0.8
5- 9	1	1.6	1	1.5	2	1.5
10-14	4	6.2	3	4.1	6	5.7
15-19	4	6.2	7	10.6	11	8.4
20-24	6	9.5	16	24.0	22	17.1
25-29	7	10.9	12	18.5	19	14.8
30-34	13	20.3	17	25.0	30	23.5
35-39	7	10.9	2	4.6	10	7.8
40-44	6	9.4	3	4.6	9	7.0
45-49	4	6.2	1	1.5	5	3.9
50-54	7	10.9	3	4.6	10	7.8
55-59	1	1.5	1	1.5	2	1.5
60-up	2	3.0	—	—	2	1.5
Unknown adult	—	—	1	1.5	1	0.8
Grand total	64	99.8	65	100.0	129	100.0

having been out of town will be considered in connection with the food supply of the patients as given under hotel association.

WATER SUPPLY

There is no indication that the public water supply was concerned in this outbreak. In November and December there was no unusual increase in the degree of contamination of the raw water delivered to the pumping stations through the tunnel systems. During these months, 1,527 samples of chlorinated water from the pumping stations were analyzed. In only one of these—a sample from Pump 2 at the Sixty-Eighth Street station, November 8—was *Bacillus coli* confirmed in more than one of the 10 c.c. quantities tested. At the time this sample was collected, similar samples were obtained from two parallel pumps drawing on the same source of supply, and on analysis showed no contamination in 10 c.c. quantities.

Table 3 summarizes the times *B. coli* was confirmed in the 1,527 samples.

TABLE 3.—*Occurrence of Bacillus Coli*

Station	Date	B. Coli Positive in 10 C.c. Quantities Sampling Taps on Pumps T-1	T-2	T-3	T-4
Sixty-Eighth Street	November 8	0/5	2/5	0/5	0/5
Washington Park	November 12	1/5	0/5	0/5	0/5
Lake View	November 13	*	1/5	0/5	0/5
Mayfair	December 7	0/5	1/5	*	0/5
Twenty-Second Street	December 26	*	1/5	0/5	0/5

* Pump not running.

For control over the chlorination of the public water supply of Chicago, hourly tests for residual chlorin are made on samples of water collected from taps on the discharge of each pumping unit in service. During November and December, 38,183 residual chlorin tests were made. Of this number only one showed no trace of chlorin in the water. This was a special sample taken at the Sixty-Eighth Street pumping station on Pump 1, at 3 p. m., December 6. On this day the water at this station was polluted by an industrial waste having exceptional chlorin absorbing powers. Even with 5 pounds of chlorin per million gallons pumped, it was difficult to maintain a residual chlorin of more

TABLE 4.—*Residual Chlorin Tests Showing Less Than One-Half Pound per Million Gallons*

Date	Station	Pump No.	Residual Chlorin Reported	Times Reported
November 17	Fourteenth Street	2	Trace*	2
December 3	Fourteenth Street	2	Trace	1
December 6	Sixty-Eighth Street	1	0	1
December 6	Sixty-Eighth Street	2	Trace	5
December 6	Sixty-Eighth Street	3	Trace	4

* By "trace" is meant that, with the orthotolidin indicator, a distinct color developed in the sample, the intensity of which was considerably less than the one-half pound per million gallons color standard.

than one-half pound per million gallons, or 0.06 part per million parts. However, special bacterial samples collected during this period showed that the water was

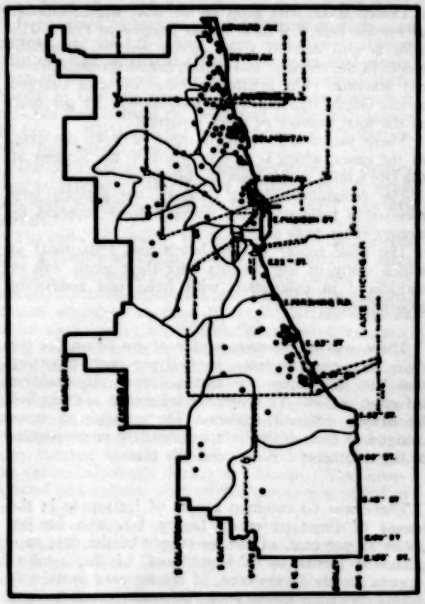

Fig. 2.—Cases of typhoid occurring in Chicago from Nov. 30, 1924, to Jan. 21, 1925, spotted according to pumping station districts.

entirely safe. The low residual reported on the samples from Pump 2 at the Fourteenth Street pumping station was due to one pump robbing the other of chlorin at the point of application in the suction well. However, as the discharge of these pumps delivers water into a common main, the mixture assures the tap water of a satisfactory residual. Table 4 summarizes the times the residual chlorin tests at the stations showed less than one-half pound per million gallons during the months of November and December.

Only 3.6 per cent. of the patients gave a history of having used bottled waters.

MILK SUPPLY

Investigation has disclosed no common milk supply, either in the homes or eating places, for the majority

of the patients reported during the epidemic. An analysis of the records shows that 28.7 per cent. of the homes in which cases of typhoid fever occurred were supplied by Milk Dealer M-I. The next largest number was supplied by Dealer M-II, who supplied 12.4 per cent. of the cases. Dealer M-I supplies about 30 per cent. of the milk consumed in the city of Chicago. During 1924 he held 1,175 licenses out of 2,724 milk licenses issued. Furthermore, this dealer derives his supply from twenty-four establishments in different sections of the country dairy district. This milk is distributed from eleven city stations, which must in fact be considered as the unit for the supply handled by this dealer.

The greatest number of cases charged to any one station of this firm was 5.4 per cent. of the total number of cases covered by this report.

Dealer M-II, who supplied the next largest number of homes, held 659 milk wagon licenses in 1924. His milk is also derived from eleven separate establishments in the country, and is distributed through twelve city stations. The greatest number of cases charged to any one of this firm's city stations was 3.1 per cent. of the total number of cases reported.

These two dealers were charged with 41 per cent. of the cases, which is in proportion to the amount of the city's milk supply handled by them.

The remaining 59 per cent. of the patients who received a residence milk delivery were supplied by twenty other milk dealers.

The milk supply of the hotels and restaurants at which many of the patients took their meals will be considered in connection with hotel and restaurant association.

ICE CREAM

There was no common source of ice cream for the cases, fifty-eight patients, or 44.9 per cent., reporting that they had eaten ice cream during the probable infection period. To these, the ice cream was supplied by fifteen different dealers. The number of cases charged to each dealer is approximately in proportion to the volume of business done by them.

ICE

There was no common source of ice supply in the homes of these patients. Dealer I-1, who handles about 35 per cent. of the ice supply of the city, supplied the homes of 12.4 per cent. of the number. Approximately 85 per cent. of the ice used in the city during this time was artificial ice, made from the city water supply.

VEGETABLES

The histories disclose that 90.5 per cent. of the patients ate celery and 86.6 per cent. ate lettuce. An additional 6.5 per cent. are reported as probably having eaten celery and 10.5 per cent. probably having eaten lettuce. There was no common source from which the patients received directly their supply of these vegetables. The department of health has spent weeks in tracing these vegetables to their ultimate source, and in general it has been found that the celery was derived from twenty-eight commission merchants who supplied the local stores. Of these, eleven buy from local receivers and seventeen receive directly from Michigan, New York, California and local home growers. Dealer C-I, Dealer C-II and Dealer C-III supplied five stores each.

In regard to the lettuce, it was ascertained that it was derived from many sources; viz., Colorado, Idaho, Oregon, Arizona, California, Michigan and local growers. Twenty-four dealers sold lettuce to local stores supplying patients, and it was found that no dealer supplied more than six stores.

OYSTERS EATEN IN THE HOME

Of the patients under consideration, nine, or 7 per cent., gave a history of having eaten raw oysters, and four, or 3.1 per cent., oyster stews in the home. The source of these oysters will be considered in connection with the source of oysters consumed in hotels and restaurants.

HOTEL AND RESTAURANT ASSOCIATION

Shortly after the outbreak of the epidemic, it was discovered that many of the patients had taken one or more meals at high-class restaurants and hotels. Out of the total of 129 cases, ninety-two, or 71.5 per cent., gave a definite history of having eaten one or more meals in such places within Chicago during the probable period of infection. This led the department of health to concentrate on the investigation of the kinds of food consumed by these patients in hotels and restaurants and the source of its supply.

Taking the patients who had eaten meals in hotels and restaurants during the probable period of infection as a unit, it was found that these persons had taken meals at twenty-five different hotels and seventy-seven restaurants in Chicago, and in fifteen hotels outside the city. It was found that the greatest number eating at any one hotel or restaurant during the probable period of infection was fifteen, who had taken meals at Hotel H-I, and nine who had eaten at Restaurant H-VIII.

The histories also disclosed that twenty-three of the hotels and restaurants included in the list showed a record of two or more patients having taken meals at these establishments.

WATER SUPPLY OF HOTELS AND RESTAURANTS

All these hotels and restaurants have the general city water supply. Only one, viz., Hotel H-III, uses well water in addition to the city water supply. In fifteen instances it was found that all the water supply for guests was filtered. The hotels and restaurants in question are located in at least six different water supply districts.

Cross connections of the city water supply with the sewers through the waste water line from the house filter were found in seven of the twenty hotels inspected for such connections. A potential danger from these connections exists, through the lowering of pressure in the city water lines, occurring when repairs are being made to street mains or where unusual pressure occurs in house sewers or waste lines, usually due to heavy rainfall. So far as is known, no such conditions occurred during the probable infection period of this series of cases.

MILK SUPPLY

The milk, cream, whipping cream, ice cream and cheese supplied to this group of hotels and restaurants were investigated very thoroughly. It was found that there was no common source of supply for these dairy products. The milk was supplied by sixteen Chicago distributors; cream and whipping cream by fourteen. Milk Dealer M-I, the dealer supplying more than 30 per cent. of the milk in Chicago, supplied 7 per cent.

of the hotels. The milk supply was derived from twenty-three shipping stations in various parts of the country. The ice cream was supplied by eight dealers, Dealer IC-I supplying the largest number, which was three. Seventeen hotels and restaurants made their own ice cream from products supplied by the aforesaid milk dealers. All the dairy products mentioned were pasteurized. Certified milk was served in only eleven of the total establishments in question. This was derived from five certified dairies.

VEGETABLES

The celery, lettuce and watercress served by the hotels and restaurants in which patients took meals during their probable period of infection have been extensively investigated with a view to tracing these foods to their ultimate source.

The celery served by these hotels and restaurants was supplied during the month of November by thirteen local dealers. In tracing it back to the ultimate source, it was found that the supply was derived from three shippers in Kalamazoo, who supplied four hotels; one shipper in Rochester, who supplied three hotels, and three other shippers in Michigan and one in Colorado, who supplied three hotels, and others scattering. On or about November 15, California celery came into the market, and following this date all hotels were supplied from this source by the dealers mentioned. There was no common shipping point in California, the supply being received from approximately ten shippers.

The lettuce served at these hotels was supplied by twelve local dealers, who purchased their supply from sixteen dealers, who either received directly or bought from direct receivers. Ten hotels were supplied by one dealer, L-I; seven by another dealer, L-II; seven by Dealer L-III, and four by Dealer L-IV. As all the hotels purchased from from two to five dealers, the largest individual dealer did not supply more than 10 per cent. of all the lettuce used. The lettuce was shipped from California, Michigan and local hothouses. On account of the number of middlemen handling this commodity, it has been difficult to trace individual lots. However, no lettuce from any one shipper has been shown to have a possible distribution to more than half of the hotels.

The watercress served in the hotels and restaurants was supplied by nine Chicago dealers. When traced back to its ultimate source it was found that it was practically all supplied by one dealer, WC-I, who derived his supply from Martinsburg, W. Va.; Huntsville, Ala., and Crisfield, Md. In a special recheck of eighty-three cases, three patients in the series gave a history of having eaten watercress.

OYSTERS

The following kinds of oysters are sold in the Chicago market:

Shell Oysters.—Practically always served on half shell and consumed raw. These include:

Blue points: Small oysters grown in the Great South Bay region of Long Island.

Rockaways: Larger oysters grown with the blue points in the same territory in the Great South Bay; known to the trade as "box" blue points.

Cotuits: Large oysters grown in salt water, coming principally from the region of Chatham and Cape Cod.

Seatags: Individually tagged oysters grown in salt water at Chincoteague, Va.

Lynnhavens: Large oysters grown near and shipped from Lynnhaven, Va.

Bulk Oysters.—These are largely used for making stews or serving as fried oysters. They are subdivided according to size, as: counts (large size); selects (medium size), and standards (small size). The bulk oysters are derived principally from the Maryland, New Jersey and Virginia coasts; also from the waters in and around Long Island, New Haven and Cape Cod. Practically no Southern grown oysters were sold in the city during the time this outbreak of typhoid fever occurred.

The striking fact is that ninety, or 85 per cent., of the 106 patients who gave no history of having been out of the city ate oysters during the probable infection period. Also that out of this series of cases, sixty-nine, or 65.1 per cent., gave a history of having eaten blue points on the half shell, derived from Shipper OS-I, and fourteen, or 13.3 per cent., of having eaten the same kind of oysters derived from Shipper OS-II.

Even more important is the fact that thirty-nine patients ate the OS-I blue point exclusively, whereas only one had eaten the OS-II blue point exclusively. Both of these brands have approximately equal distribution in Chicago, the OS-I consumption amounting to 1,522 barrels from the beginning of the 1924 season to Jan. 1, 1925, and the OS-II brand, 1,518 barrels, only four barrels less.

The distribution of the remaining brands of oysters was as follows: OS-III, 498 barrels; OS-IV, fifty-one barrels; OS-V, thirty-six barrels; OS-VI, twenty barrels.

The dates of onset of the cases in which the patients gave a history of having eaten oysters, and the dates on which the oysters were eaten, were carefully compiled. The kinds of oysters consumed by the patients, classed according to date of onset, and the date on which such oysters were eaten, were also determined, being obtained from the patients by the department of health investigators, and subsequently rechecked by the field investigators of the United States Public Health Service. The information obtained from the patient was checked against the records of oyster purchases in hotels and restaurants, and these records were in turn checked against the records of oyster sales by the various wholesale dealers in Chicago. This investigation and recheck were carried out over a period of about eight weeks.

All the employees of local Oyster Dealer OC-I, who distributed about 75 per cent. of the aforementioned blue points derived from Shipper OS-I, were examined for evidence of typhoid. Stools were obtained after administration of elaterin, and no evidence of typhoid fever or typhoid carrier was found in any of the employees examined. The urine also was negative.

TYPHOID CASES FOLLOWING HOTEL BANQUET

In the series of cases with hotel and restaurant association, there were three in which oysters were eaten at a banquet held at Hotel H-I, Nov. 11, 1924, the banquet being attended by about 435 guests. Blue points on the half shell were served on this occasion. Two of the guests who ate oysters subsequently developed typhoid fever, one going to bed, November 27, and the other, December 2. One of the waiters who ate many oysters left over by the guests also developed typhoid fever. His first symptoms appeared about December 1, and he went to bed, December 7. A waiter "captain" of this hotel who ate oysters on November 12, presumably from the same lot, also developed typhoid fever, going to bed about November 17.

Two persons at this hotel who shucked and prepared oysters served at the banquet were examined for evidences of typhoid fever. The Widal tests were negative, and the examinations of the urine and the stools after administration of elaterin showed no evidence of typhoid bacilli.

The oysters served at this banquet were from a carload lot distributed by Local Dealer OC-I, and shipped by Shipper OS-I, October 25, the car arriving in Chicago, October 30. This car consisted of 130 barrels, of which approximately ninety-eight barrels were sold to hotels and restaurants in the city of Chicago. The number of barrels supplied to various hotels and restaurants, together with the details in regard to typhoid fever cases giving a history of having eaten oysters from this lot, were also secured.

OUT-OF-TOWN CASES

In this series there are twenty-three patients who were apparently infected out of town, but not all the patients were out of town during the entire probable infection period. In this series of twenty-three cases, nine patients were in New York, two each in Milwaukee, Rockford, Ill., and Lake Forest, Ill., and the others scattered. Sixteen of the series gave a history of having consumed raw oysters during their absence from the city. Thirteen of the sixteen gave a history of having eaten blue points, but no complete data in regard to the origin of these blue points are available.

CASES IN THE SUBURBS

During the time of the Chicago outbreak there was an increased incidence of typhoid fever in the suburban towns. Twenty-one cases were reported from Evanston, eleven from Oak Park, and four from Wilmette.

In twenty-four of these cases, histories were obtained by investigators of the United States Public Health Service. Of these, twenty-two gave a history of having eaten oysters during the probable infection period. These oysters were derived from the sources listed in Table 5.

TABLE 5.—*Source of Oysters in Twenty-Two Cases*

	Source	No. of Cases
Blue points	OS-I	17
Blue points	OS-II	1
Probably cotuits	Source not determined	1
Heated oysters in some form		3
		22

OYSTER SURVEY

The oysters supplied by Shipper OS-I are grown in the Great South Bay on the southern shore of Long Island. This firm conducts its business on a large scale, and supplies blue points to many cities in the United States.

Early during the outbreak of typhoid fever in Chicago, December 15, two investigators of the Chicago Department of Health were detailed to make a sanitary survey of oyster growing and handling in the vicinity of New York. December 16, they visited the plant of Oyster Shipper OS-I, and report conditions as follows:

The general sanitary conditions at the plant were found to be good. The plant is located in a village with a population of 4,000, which is augmented during the summer by considerable tourist traffic. They were advised that there is no sewer system in the town, every dwelling being required by ordinance to have a double compartment cesspool of the leaching type. Soil in the vicinity is sandy. The sanitary sewage from the oyster plant is discharged into a leaching cesspool located about 100 feet away from the slip. The general wash water from the plant is discharged into another cesspool located the same distance from the slip. On the day previous to the visit of our investigators, Dr. P. B. Parsons, of the Bureau of Chemistry, U. S. Department of Agriculture, had made an inspection and placed strong dyes in these cesspools to detect any seepage into the slip. It was reported that none was noted.

The toilet used by office employees was of a modern flush type, discharging into the cesspool, while that used by the shuckers and other employees is a privy of the surface type, located about 100 feet from the plant, and 150 feet from the slip.

The oysters handled from this plant are all grown in the Great South Bay. This bay receives the runoff from the south central portion of Long Island. There are no large rivers discharging into this bay, the runoff being largely drained from agricultural districts.

It was reported that the sewers from none of the towns bordering on this bay discharge directly into this body of water. It was learned that the oyster industry has been very jealous of this bay, and has been extremely cautious in matters concerning sewage disposal in this district. On the south side of the bay there is a long neck of land which serves to protect the bay from the Atlantic storms. This stretch of land, particularly in the vicinity of Fire Island Beach, is a popular summer resort. It was learned that at Ocean Beach near the Fire Island inlet to Great South Bay there is a summer colony of a population of about 300. It was reported that sewage from this community is delivered to a septic tank, the effluent from which is disinfected by chlorin before being discharged into the bay. Prior to the arrival of the investigators, it was learned, this sewer had been discharging directly into the bay since the close of the vacation season. During this time only caretakers are living at the colony, there being about thirty of these men. It was reported that an investigator from the New York City Department of Health had made a survey of conditions at this beach and directed that the sewage be discharged into the septic tank instead of into the bay.

Dr. Parsons stated that he had made a survey of conditions at Ocean Beach, and he was of the opinion that the quantity of sewage discharged into the bay was negligible so far as contaminating oysters was concerned.

In connection with the typhoid history of employees of his company, the manager of the plant stated that all were well known to him, and as far as he knew had never had typhoid fever. When asked if it was routine practice with his company to have a medical examination made of all employees, including bacteriologic examination of stools and urine, he stated that this had not been the policy.

The oysters supplied by Shipper OS-II come from a plant located 200 yards from the OS-I plant. The oysters handled by this shipper are partly grown by himself and partly secured from natural growers, all coming from the Great South Bay.

Drainage from the building is returned into the slip. The toilet used by employees was a surface privy, located about 100 feet back of the oyster house.

At the time of this investigation, the manager of the OS-I plant claimed positively that they did not supply any oysters except those grown in their chartered waters in the Great South Bay. Since then, information has been obtained tending to show that some Greenport oysters were taken into this plant for reshipment. The dates on which such Greenport oysters were received and whether or not any of them were sent to Chicago have not been determined.

In regard to oysters produced at Greenport, the investigators of the Chicago Department of Health found, December 21, on their inspection of this territory, that two local oystermen, a father and son, were ill with typhoid fever. The father went to bed, October 27; the son, November 20. They were employed as oyster runners for Shipper OS-III. Each day they left Greenport and made a trip to Shinnecock Bay, by way of Little Peconic Bay and the Hampton Inlet. There they purchased seed oysters from natural growers and brought them back to Peconic Bay and laid them down over designated oyster beds. They ate their breakfast and dinner at home, and lunch aboard the boat. There were no toilet facilities on this boat, the human discharges being dumped overboard. Both father and son worked over oyster beds during the

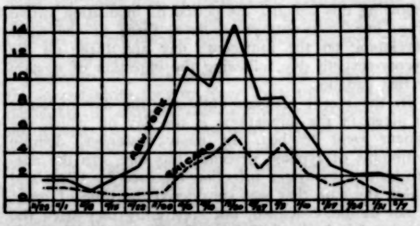

Fig. 3.—Typhoid rates, New York and Chicago: number of cases per hundred thousand of population reported from Oct. 25, 1924, to Feb. 7, 1925. The dates refer to the end of the week for New York; the week for Chicago reports ends one day earlier.

incubation period of their sickness. It was learned that until the son became sick, arrangements for bedside sterilization of bodily wastes from the father were not made, these wastes being discharged directly into the Greenport sewer system.

With regard to the oysters produced in the region of Raritan Bay and Princess Bay, south of Staten Island, the Chicago Health Department investigators found that the waters overlying these beds had been exposed to a considerable increase in pollution since the opening of the Passaic Valley trunk sewer, August 2. This sewer serves a population of about 1,000,000 people. Early in August only about 30,000,000 gallons of sewage was discharged daily into New York Bay near Robbins' Reef, but by the latter part of October more than 100,000,000 gallons of sewage was discharged from this outlet. This quantity of sewage is equivalent to about 20 per cent. of that discharged into the bay from New York City, and probably increased the pollution of the waters passing through the Narrows in that proportion.

Another factor concerned in the Passaic Valley sewer is that the sewage is relatively free from industrial wastes. On account of New York's sewage being discharged into the lower bay, oyster beds in these waters have been considered of a more or less suspicious character, and with this 20 per cent. overload of pollution it was deemed important to investigate oysters obtained from these beds. It was also learned that most of them are shucked and shipped to western markets; also that a relatively small percentage is sold as shelled stock in the New York market.

In this connection it should be noted that at the time of the outbreak of typhoid fever in Chicago there was an extensive outbreak of the same disease

TABLE 6.—*Bacteriologic Examination of Oysters Within Twenty-Four Hours After Arriving in Chicago, from Sept. 1 to Dec. 31, 1924*

From Shipper OS-I		From Shipper OS-II	
December 12 Score 32	Shell oysters*	December 19 Score 1	Shell oysters*
December 16 Score 0		December 23 Score 2	
December 16 Score 1		December 23 Score 2	
December 22 Score 2			

General Summary—All Sources

State	Shell Oysters			Bulk Oysters		
Score:	Under 100	101-500	Over 500	Under 100	101-500	Over 500
Maryland	0	0	0	25	7	19
Virginia	1	0	0	8	2	13
Massachusetts	2	0	0	2	0	0
Connecticut	0	0	0	6	0	0
New Jersey	0	0	0	10	5	2
New York	7	0	0	1	0	0
Pennsylvania	0	0	0	1	0	0

* Included in general summary—New York.

TABLE 7.—*Bacteriologic Examination of All Samples of Blue Point Oysters Derived from Shipper OS-I, Taken Within Twenty-Four Hours and Later*

Kind	Date Examined	Date Received	Score
Blue points	Dec. 5, 1924	November 28	14
Box	Dec. 5, 1924	November 28	320
Blue points	Dec. 10, 1924	December 2	1
Box	Dec. 10, 1924	December 2	14
Blue points	Dec. 11, 1924	December 7	0
Box	Dec. 11, 1924	December 7	0
Blue points	Dec. 11, 1924	December 6	2
Blue points	Dec. 12, 1924	December 2	14
Box	Dec. 12, 1924	December 2	32
Blue points	Dec. 16, 1924	December 12	0
Blue points	Dec. 16, 1924	December 2	1
Box	Dec. 16, 1924	December 15	1
Blue points	Dec. 16, 1924	December 15	0
Box	Dec. 16, 1924	December 2	23
Box	Dec. 17, 1924	December 13	0
Blue points	Dec. 17, 1924	December 13	1
Blue points	Dec. 17, 1924	December 9	0
Blue points	Dec. 18, 1924	December 13	0
Blue points	Dec. 18, 1924	December 13	0
Box	Dec. 18, 1924	December 13	4
Blue points	Dec. 18, 1924	December 9	0
Box	Dec. 18, 1924	December 9	0
Blue points	Dec. 22, 1924	December 20	1
Blue points	Dec. 22, 1924	December 13	2
Box	Dec. 22, 1924	December 3	2
Blue points	Dec. 23, 1924	December 18	0
Blue points	Dec. 28, 1924	December 13	4
Box	Dec. 28, 1924	December 13	1
Blue points	Dec. 30, 1924	December 13	32
Blue points	Jan. 13, 1925	December 13	1
Blue points	Jan. 15, 1925	December 10	0
Blue points	Jan. 15, 1925	December 10	0
Blue points	Jan. 28, 1925	December 13	0
Box	Jan. 29, 1925	December 12	0

in New York. The course of the epidemics in the two cities is shown graphically in Figure 3.

In New York the outbreak started in the week ending November 8; in Chicago it started two weeks later, and in both cities it reached its peak in the week ending December 20, with a secondary peak in the week ending January 1.

BACTERIOLOGIC REPORTS ON OYSTERS

The results of the bacteriologic examination of blue point oysters supplied by Shippers OS-I and OS-II to the city of Chicago in the fall of 1924 are shown in Tables 6 and 7.

This includes only the results of examination of samples taken within twenty-four hours after arrival in Chicago. For comparison, Table 6 also shows a summary of the results of bacteriologic examination of samples of shell and bulk oysters derived from the states of Maryland, Virginia, Delaware and Connecticut for the same period. It will be noted that the samples examined of oysters supplied by shipper OS-I are relatively very low, all falling below the standard score of 50 as recommended by the American Public Health Association.

In all, ten samples of shell oysters were examined during this period, all of which scored less than 100.

On the other hand, samples of bulk oysters showed much higher scores; 100 samples were taken, and of these fifty-three scored less than 100; forty-seven, more than 100, and thirty-three, more than 500.

The laboratory of the Chicago Health Department has given considerable time and effort to an attempt to isolate *B. typhosus* by direct plating and subsequent isolation and serologic methods.

In agglutination tests with typhoid-like organisms isolated from oysters by the macroscopic method, the laboratory encountered some difficulty with cross agglutinations. Such agglutinations appeared in dilutions as high as 1 in 400 of a commercial antityphoid serum then in use. The typhoid controls, however,

TABLE 8.—*Approximate Normal Oyster Consumption in Chicago During November, 1924* *

Economic Condition	Total No. of Persons Surveyed	Number and Percentage Giving History of Oyster Consumption			
		Raw Shell	Raw Shucked	Heated Shucked	Total Eating Oysters
A—Zone of recent epidemic	338	22 6.5%	24 6.8%	54 15.3%	73† 20.8%
B—Middle class	163	2 1.2%	22 13.5%	32 19.6%	48† 29.4%
C—Poor	198	5 2.6%	5 2.6%	2 1.0%	12† 6.1%
D—All classes	712	33 4.6%	51 7.2%	88 12.4%	133† 18.7%

* Based on a survey by the U. S. Public Health Service in February, 1925.

† These totals are less than the sum of the corresponding horizontal items, as many persons ate more than one type of oyster.

were agglutinated completely in much higher dilutions; viz., up to 1 in 6,000, and partially in dilutions up to 1 in 12,000. Cross agglutinations higher than 1 in 100 did not occur with our own and other serums, which, however, were of lower titer, against *B. typhosus*.

The organisms referred to on further study proved to be *B. fecalis-alkaligenes*, *B. cloacae* and certain strains of *B. proteus*. Studies of the oyster flora disclosed the fact that these organisms are frequently encountered in the examination of oysters. They produce colonies on Endo's medium and brilliant green, which closely resemble those of *B. typhosus*, and when cross agglutinations occur they must be differentiated from *B. typhosus* by careful cultural study and additional serologic methods.

CLAMS

In three, or 2.3 per cent., of the 129 cases in this series in which infection occurred in the city, a history of eating raw clams was obtained. The scores on clams were uniformly low.

CONSUMPTION OF OYSTERS BY HEALTHY PERSONS IN CHICAGO

A survey of healthy persons residing in the parts of the city of Chicago from which a substantial number of typhoid fever cases were reported during this outbreak showed the percentage of persons eating oysters during the month of November, as given in Table 8.

THE PROBABLE PERIOD OF INCUBATION

In general, the classical incubation period for typhoid has been followed in the epidemiologic study of this outbreak. According to Parkes and Kenwood,[1] this is from ten to fourteen days. The limits of its maximum duration are not accurately known, but in rare cases it may be prolonged to twenty-one days or even to twenty-three. In outbreaks in which oysters were the carriers of infection, and were consumed on a definite date, as in the case of the outbreak following a students' supper at Wesleyan University, reported by Conn,[2] it was found that the period of incubation was from eight to twenty-eight days, varying widely, and sometimes even slightly exceeding these two limits. In the case of the outbreak following the Minisink Firemen's banquet reported by Stiles,[3] in fourteen of the seventeen cases following this banquet the period of incubation varied from one to twenty-seven days, three of the cases developing on the fourteenth day and three on the twenty-seventh day following the ingestion of oysters at this banquet.

In the recent Chicago outbreak, the day of onset as given in the tabulations is the day on which the patient went to bed. In many instances, definite symptoms of typhoid preceded this day. In the outbreaks due to oyster infection reported by Conn and Stiles, the date that was considered the time of onset is not difinitely defined, but apparently they used the date on which the first symptoms appeared, and consequently their incubation period would be shorter than that found in the Chicago outbreak.

MEASURES THAT WERE TAKEN TO COMBAT THE EPIDEMIC

The following is a chronology of the measures taken to combat the epidemic:

Dec. 4, 1924, on account of a slight increase in the number of typhoid fever cases reported, the number of oyster samples collected daily was increased to ten, and the ice cream samples to five. Special attention was given to the condition of the water supply.

December 5, the commissioner of health called a conference of the local oyster dealers and announced that steps would be taken to safeguard this product for the Chicago market. It was agreed that the tentative score of 100 suggested by the State Food Standards Commission would be enforced.

December 9, the commissioner of health broadcast over the radio a warning in regard to the danger of eating raw oysters. On the same evening the newspapers were notified, and a similar warning was published in the Chicago papers the next day. This action was taken after an increase of twenty cases of typhoid over the normal expectancy for this period

1. Parkes and Kenwood: Hygiene and Public Health, Ed. 6, p. 492.
2. Conn: Report of the State Board of Health of Connecticut, 1894, pp. 239-264.
3. Stiles: Bull. 156, Bureau of Chemistry, U. S. Depart. Agric., p. 16.

had been reported since November 30. Nine out of the twelve histories of cases accessible at this time showed that the patients had eaten oysters. In a large percentage of these cases, the oysters were derived from the vicinity of New York. At that time, 240 cases of typhoid had been reported within two weeks in New York, with no apparent cause, such as water or milk.

December 10, the significance of the hotel and restaurant association of reported cases was established. Following this, a survey was made of all food supplies in such hotels and restaurants; also an inquiry was made into the health of the food handlers in these places. The food supply of approximately thirty hotels and restaurants was thoroughly investigated.

December 11, all blue point oysters supplied by Shipper OS-I were required to be held for a period of two or more days until tests for gas-producing organisms had been completed in the laboratory, or until negative laboratory tests were obtained.

December 14, two investigators were sent to New York to survey conditions under which oysters were grown and handled.

December 15, on recommendation of the department, the committee of local oyster dealers agreed to withdraw the supply of six oyster shippers from the Chicago market because their products showed excessive *B. coli* scores.

December 18, as a report had been received from the investigators sent to New York that there was a possibility of contamination of oysters supplied from the Raritan Bay district, all oysters possibly from this source shipped by four New York dealers were shut off. The supply from this source found in the city was condemned. Lots of oysters supplied by Shipper OS-I were held until bacteriologic examinations were completed in the laboratory.

December 19, by agreement with local oyster dealers, the supplies of four shippers were withdrawn on account of high scores, and also the supply of all shippers from Crisfield, Md.; Chincoteague, Va.; Portsmouth, Va., and Shipper OS-XI, Port Norris and Baltimore.

Jan. 2, 1925, the commissioner of health gave notice that no oysters were to be sold in the city of Chicago unless a permit had been issued to the shipper and the products were clearly marked, showing either the name or the permit number of the shipper. Application forms for such permit were supplied to the local dealers, as well as to the Eastern shippers. The application contained questions in regard to the condition of the waters in which the oysters were grown, the manner in which they were transported, the sanitary conditions at the shucking and packing plants, the water supply of such plants, and the health of the employees engaged in the handling of the oysters. The answers to these questions were required to be supported by formal approval of the oyster beds and packing establishments by federal or state authorities. The application is sworn to by the applicant and the data are verified by the Chicago Department of Health before a permit is issued.

January 15, the order of Dr. I. D. Rawlings, director of the Illinois State Department of Health, was put into effect, providing that no oysters should be sold in the state of Illinois unless the purchaser signed a contract that they would not be eaten raw; in the case of dealers, that the dealers agreed that they would not be sold to any person who did not file a contract agreeing that the oysters would not be eaten raw. Placards supplied by the state board of health carrying such warnings were posted in hotels and restaurants by inspectors of the Chicago Department of Health.

CONCLUSIONS

A review of the epidemiologic data in regard to this outbreak of typhoid fever leads to the following conclusions:

1. Water, milk, ice cream, ice and clams can be excluded as the cause of the epidemic.

2. Carriers in hotels and restaurants were not the source of the infection, on account of the large number of hotels and restaurants involved.

3. Apparently, raw vegetables, especially celery, lettuce and watercress, were not the cause.

4. Blue point oysters supplied by Shipper OS-I were probably responsible for sixty-nine cases, or 65.1 per cent. of the cases, of typhoid fever in persons who contracted the disease in Chicago; that is, who were not out of town during the probable period of infection. This includes patients who gave a definite history of eating raw blue points derived from Shipper OS-I and who contracted the disease from four to twenty-eight days thereafter.

5. The oyster beds and plant of Shipper OS-I, supplying blue points responsible for a large percentage of the cases in this district, were in good sanitary condition; greater precautions are taken at this plant to prevent contamination than is ordinarily the case; it is possible that oysters derived from Greenport were received in this plant and in some way reached the Chicago market.

6. The extensive outbreak of typhoid fever in New York, starting two weeks earlier than the Chicago outbreak and then running concurrently, reaching its peak and secondary peak at the same times as the Chicago outbreak, and reported as having been due to oysters, bears some relation to the Chicago outbreak. The fact that the Chicago outbreak started later than the New York epidemic is especially significant. This leads to the conclusion that there is a possibility that the oysters responsible for the New York outbreak are in part at least of the same kind as those believed to be the cause of the infection in Chicago. Whether or not some of these oysters came from Raritan and Princess bays and were substituted in some way or other for oysters said to have been supplied by Shipper OS-I has not been definitely determined.

7. A relatively large percentage of the remaining Chicago patients, including those who had been out of town during the probable period of infection, gave a history of having eaten oysters during the time the infection occurred. This is true of 56.8 per cent. of the remaining city patients, and 69.6 per cent, of the out-of-town patients. In contrast with this percentage are the figures of the field investigation showing that 20.6 per cent. of healthy persons, in the more prosperous sections of the city, ate oysters during November, and only 13.1 per cent. ate raw oysters. Sufficient data are, however, not at hand to warrant the conclusion that these other cases are due to oysters supplied from any specific source.

8. A large percentage of oysters, especially bulk oysters, have a high colon score. Of the samples collected in Chicago during the last three months of 1924,

245, or 68.4 per cent., scored above 100. Steps should be taken to prevent interstate shipment of contaminated or infected oysters, and until such steps are taken by the federal authorities, local health authorities should adopt regulations requiring a permit for the shipment of oysters; also, all oysters supplied should be labeled, showing the source of production and the establishment in which they were shucked and packed.

9. Infection of blue points supplied by Shipper OS-I occurred prior to their arrival in Chicago. Careful examinations of the employees of Local Dealer OC-I, distributing these oysters in Chicago, showed no evidence of typhoid fever or typhoid carriers in any of the employees.

10. In a study of seven year medians for typhoid fever in Chicago and the expected general seasonal trend of the disease, there was noted a rather sharp uplift of the curve in November. This incident was further studied for each year, and it is interesting to note that the increase was not apparent in 1918, 1921 or 1922, but that in 1919, 1920 and 1924 the increase did occur. It is not beyond a reasonable assumption that this increase may have been due to the consumption of contaminated oysters. The statistical and epidemiologic data of the recent outbreak tend to support this hypothesis. In 1923 the increase occurred, but the presence of a water-borne outbreak during the months of November and December tended to eliminate oysters as a causative factor.

OXYURIS VERMICULARIS AS A CAUSATIVE FACTOR IN APPENDICITIS *

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The occurrence of *Oxyuris vermicularis* in the vermiform appendix of the human species has been frequently described in the literature. The description of parasites in this structure dates back to Fabricius, in 1634, and Santorini, in 1724. Metchnikoff [1] was the first to lay stress on the relationship of intestinal parasites to appendicitis. Even though many reports, chiefly of single instances, have appeared from various centers, especially abroad, over a considerable period of time, and form in their aggregate quite a voluminous literature, nevertheless, the rôle of the oxyuris as a causative factor of appendicitis has received little consideration. The reasons for such a condition are probably twofold: (1) the failure of proper clinical and pathologic observations as to the extent of their occurrence in appendical involvements; (2) the difference of opinion existing relative to the pathogenic rôle played by these nematodes in such lesions.

Unless the pathologist directs specific attention to the frequency of the occurrence of *Oxyuris vermicularis* and makes a careful examination of a series of appendixes with such a purpose in mind, hundreds of such structures will pass through the usual routine of pathologic examination, and such worms or their ova will not be observed. When, however, an appendix appears presenting a large number of oxyurids, they must of necessity be noted, even though the gross inspection has been of only a casual character. Such an occurrence alone, or the repetition of this happening, will often stimulate a more detailed observation of such structures, which will usually result in the finding of milder types of infection; that is, when lesser numbers of such organisms exist.

As observed in the series of instances here reported and as generally described by others, the oxyuris invasion has occurred especially in appendicitis clinically and pathologically of a subacute and chronic character. Excluding, therefore, the acute lesions which frequently require obligatory surgery, the question arises, if the causal relationship of oxyuris to the subacute and chronic types is finally accepted, whether the determination of the presence of these causal excitants classifies these particular cases into a medical rather than a surgical category.

The object of the present report is to record our observations of twenty-two appendixes containing *Oxyuris vermicularis* in a series of 121 appendixes presented in routine hospital laboratory examination, together with the special consideration of the histopathology of those appendixes in which *Oxyuris vermicularis* infection has been found.

MATERIAL STUDIED

Following the observation of an appendix heavily infected with clusters of oxyurids, 121 current appendixes were studied in detail for the presence of such worms. These appendixes consisted of an unbroken sequence of such structures received in the laboratory, independent of the clinical picture or pathologic character presented.

The method of examination consisted in sectioning the appendix on one side from base to apex. It was then laid open and the content and mucous membrane examined grossly and with a hand lens for oxyuris worms. The number and position of the worms were noted before the contents were disturbed. The content was then washed in saline solution, the worms, especially those attached to the mucosa, being left undisturbed. The washings were centrifugalized and examined microscopically for ova and younger forms of worms. In a number of instances, the worms were found buried in the mucosa. At times only the head of the worm had penetrated, and at others from one half to three quarters of the nematode had entered into the mucous membrane.

The number of worms present in the appendix varied from one to thirty-two, with an average of 6.45 to each appendix. The oxyuris worms were in the majority of instances located within 2.5 cm. of the proximal portion of the appendix; that is, the portion attached to the caput coli. In only a small number of instances were the worms found at the distal or apical portion of the lumen. They were seldom evenly distributed, and usually occurred in clusters or groups. The vast majority of the worms were of the female type, and many were heavily laden with ova. Frazier [2] considers that the female is impregnated in the region of the cecum and the embryos of the worms develop in the area. Still [3] considers that the appendix may serve as a breeding place for the worms.

A compilation of the pertinent data of the cases observed by us can be best obtained through tabulation. The accompanying table consists of the twenty-two

* From the departments of pathology of Tulane University of Louisiana School of Medicine and the Presbyterian Hospital.

1. Metchnikoff: J. de pract. 80: 185, 1901.
2. Frazier, C. H.: Proc. Path. Soc. Philadelphia 3: 126, 1900.
3. Still: Brit. M. J., Jan. 1, 1899.

instances in which one or more pinworms were found present in the appendixes removed at operation.

CLINICAL CONDITION

Although the series of appendixes studied was of cases presented for operation in a general hospital, it is of interest to note from the table that the twenty-two positive oxyurid appendixes of 121 studied occurred mostly in persons between the ages of 14 and 30 years. The average of the ages if compiled is 23 years. Further, of the twenty-one positive cases, nineteen were in females and only three in males, although of the total 121 appendixes studied, seventy-seven were from female and forty-four from male patients.

The clinical history of nearly all the cases was one of recurrent attacks, over a period of one or more years, consisting of abdominal discomfort, pain, more especially in the right iliac region, and nausea, with little or no fever suggestive of the phenomena accompanying the usual chronic appendical syndrome. In a few, fever, leukocytosis, rigidity, tenderness and gastric manifestations indicative of an acute attack occurred.

Cases Showing Oxyuris Vermicularis in Appendix

No.	Sex*	Age, Years	Pathologic Diagnosis	Press of Appendix	Location and Number of Oxyuris Worms	Brief Clinical History
1	♀	24	Chronic	.....	1, at base.....	Menstrual disturbance; had pain in right side several times; ectopic gestation found; nervousness; last attack, unclear
2	♂	19	Chronic	.....	2, 1 cm. from base.....	Recurrent pains in side; no fever; nausea; constant tired feeling and loss of weight; leukocytes, 9,550; P., 60%; S.M., 37%; L.M., 1%; E., 2%
3	♀	23	Chronic	.....	2, at base.....	Nervousness; menstrual disturbances; pain in right side recurrent during past year; leukocytes before operation, 21,250; P., 80%; S.M., 11%; L.M., 8%; 6 days after operation, 6,500; P., 71%; S.M. 23%; L.M., 9%; E., 1%
4	♀	21	Chronic	.....	1, at base.....	Appendicitis recurrent during past 1½ years; occasional nausea and vomiting; no rigidity
5	♀	10	Subacute	Oxyuris ova	7, 1 cm. from base; 3, 2.5 cm. from base; 17 scattered to apex	Pain in right side with recurrent attacks, off and on, of 3 years' duration; mass in side, and rigidity
6	♀	14	Subacute and chronic	.....	3, at apex; 5, extreme apex; 22, 2.5 cm. from base; 4, 3.5 cm. from base	Pain in right side; with ovarian trouble; recurrent nausea; no fever
7	♂	18	Chronic	Trichocephalus dispar ova	1, at base.....	Recurrent pain in right side of abdomen; nausea; no vomiting; no fever; leukocytes, 6,000; P., 69%; S.M., 29%; L.M., 4%; E., 4%
8	♀	15	Chronic	.....	2, at base.....	Appendicitis; no sharp pain, but constant run down feeling and uneasiness in lower abdomen; slight tenderness on deep palpation in right iliac region; leukocytes, 11,500; P., 91%; S.M., 29%; L.M., 1%; E., 2%
9	♀	25	Chronic	Trichocephalus dispar ova	1, 0.5 cm. from base; 3, 2.5 cm. and 1, 3 cm. from base 1 at extreme apex	Pain in abdomen; recurrent attacks over 2-3 years; no fever; nausea; last attack 2 weeks ago; no marked pain, but uneasy feeling; leukocytes, 6,500; P., 69%; S.M., 27%; L.M., 3%; E., 2%
10	♀	21	Chronic	Oxyuris ova	2, 1 cm. from base; 1, 2.5 cm. from base; 1, 3 cm. from apex	Recurrent attacks of pain in abdomen over 5 years; present attack for 4 days; pain about umbilicus and right iliac region; nausea and vomiting; no fever; general rigidity more marked in right iliac region
11	♀	14	Subacute and chronic	Oxyuris ova	1, 2 cm. from base; 1, 2.5 cm. from base; 1, 2 cm. from apex	Pain in right side, recurrent; no fever; nausea; vomiting; constipation; attacks of pain in whole lower bowel
12	♀	29	Chronic	.....	2, 2.5 cm. from base.....	Pain in right side of abdomen; stomach trouble for 2 years, with occasional period of pain in right side radiating to "back and stomach"; tenderness generalized in lower abdomen
13	♀	15	Chronic	Many oxyuris ova	10, scattered from tip to base	Pain in right side, recurrent; last attack of 2 days' duration; severe pain in right side; nausea; vomiting; marked rigidity in right iliac region; leukocytes, 10,000; P., 79%; S.M., 19%; L.M., 1%; E., 2%
14	♀	21	Chronic	.....	1, 2 cm. from base.....	Recurrent attacks of abdominal pain; last attack, nausea and vomiting; temperature, 100.4; generalized rigidity
15	♀	30	Subacute and chronic	.....	1, at base; 1, at apex; 2, 2.5 cm. from base	Recurrent attacks of pain in right and left sides; pain in left side during menstruation; generalized rigidity more in left iliac region; leukocytes, 4,500; P., 57%; S.M., 35%; L.M., 5%; E., 3%
16	♀	27	Chronic	.....	1, 1 cm. from base.....	Cramps in whole abdomen; nausea; vomiting; temperature, 101; leukocytes, 14,250; P., 84%; S.M., 11%; L.M., 5%
17	♀	28	Chronic	.....	2, at base.....	Recurrent pain in right side; nausea and vomiting; rigidity over right iliac region
18	♀	40	Subacute and chronic	Oxyuris ova	2, at base; 2, 2 cm. from base	Uterine bleeding; pain in abdomen and large amount of fluid; recurrent pain in epigastric and right iliac region; leukocytes, 23,000; P., 87%; S.M., 13%; L.M., 2%; E., 1%; 3 weeks after operation, ova oxyuris and trichocephalus found in one out of three tests; leukocytes to normal; R.B.C., 3,800,000; Hb. 59%
19	♀	30	Chronic	.....	1, at apex.....	Pain in right side, recurrent in lower abdomen; ingestion and loss of appetite; constipation and uneasy feeling; leukocytes before operation, 11,600; P., 85%; S.M., 11%; L.M., 7%; after operation, 8,000; P., 69%; S.M., 30%; L.M., 2%
20	♂	15	Chronic	.....	1, 3.5 cm. from base.....	Indigestion for some time, with pains in chest and upper abdomen; first acute attack of pain in right side; first day pains generalized in abdomen; after third day, localized in right iliac region; no nausea or vomiting; little fever
21	♀	29	Chronic	.....	1, at base.....	Occasional pain in back and lower abdomen; for last year or so, tenderness in right iliac region and slight amount in left iliac region; leukocytes, 6,000; P., 76%; S.M., 20%; L.M., 4%; E., 3%
22	♀	31	Subacute and chronic	.....	2, at base.....	Stomach and intestinal trouble, lasting for last 2 years, with tired feeling and attacks of pain in lower abdomen; vaginal discharge for years

* In this column, ♂ indicates male; ♀, female.

For the main portion, the leukocytes were normal in number or presented but slight increase in the total count, with little or no change in the normal percentage of polymorphonuclear neutrophils. It is noteworthy that no evidences of eosinophilia were found in the differential counts. Occasionally certain nervous phenomena, probably of reflex nature, were noted, but certain of the more representative symptoms of pinworm infection, such as itching about the anus, were not described. In this connection, it is of interest that no stool examinations were requested previous to operation. This would indicate that the presence of intestinal parasites was not considered likely or in any manner related to the clinical case in hand.

PATHOLOGY

The proximal half of the appendix was sectioned transversely and the distal half was cut longitudinally. Serial sections of both portions were prepared.

Relative to the pathologic study, two main considerations are of interest: (1) the prevailing character of lesion present, and (2) whether it is practical in the

histopathologic study to demonstrate that the oxyuris worm possesses pathogenic properties, either direct or indirect, or is merely a harmless transient or resident of the appendical lumen.

GROSS APPEARANCE

As a whole, the general aspect of the appendixes was that present in the usual chronically inflamed appendix; that is, thickening, with congestion of the vessels of the serosa. The specific features were present in the mucosa, where minute hemorrhagic areas were found. At times, the worms were found embedded in the hemorrhagic ulcers. The content of the lumen was often of a liquid, sanguineous nature of either dark color or prune juice character.

MICROSCOPIC

As a whole, the character of the pathologic condition observed microscopically in the positive instances, that is, those in which there were worms, demonstrate a lesion of the subacute and chronic character. These were represented by the presence of lymphoid and plasma cells and eosinophils in the mucosa, submucosa and at times the muscularis of the appendix. These cells varied in number and distribution from a reaction of a mild character to one in which an extensive distribution and large number of such wandering cells had invaded the various histologic structures. With the exception of those sections wherein the intramural invasion of the worm and the lesion thereby provoked is plainly demonstratable, no specific character of pathologic change has been observed by us. In other words, in the series of 121 appendixes studied, no arrangement of the local reaction on the part of the host nor classic cellular elements for this parasite were found to indicate a specific type of response. In this manner wherein the worms and accompanying lesion were not sectioned, those appendixes demonstrating positive worms in the gross could not be differentiated through the histopathologic study from those which were negative for the nematodes.

In the second consideration, that is, the causal relationship of the oxyuris to the pathologic condition present, more interesting information is to be gleaned. In the serial sections of certain of the positive appendixes, the presence of worms actually invading the mucosa and submucosa and extending to the muscularis can be demonstrated. Degenerative and exudative changes are at times extensive about the invading parasites, and tissue destruction is observed in the wake of the passage of the worms. In the vicinity and pathways of some of the parasites, evidences of fibrin, serum and polymorphonuclear neutrophils, indicative of an acute reaction, can be observed, although the lesion throughout the structure as a whole is that of a subacute and chronic type. In many areas, the parasites have produced marked ulceration. The epithelium is totally destroyed, and at times excavations have occurred beneath this portion. The destruction of tissue may extend through the submucosa and involve a portion of the musculature. A granular necrotic detritus is found in the crater of the ulcer (Figs. 1 and 2), and at times red blood cells and large pale cells with small round nuclei, corresponding in morphology to endothelial phagocytic cells, are to be seen. Fibrin and inflammatory cells are occasionally found along the edges of the ulcer. It appears unusual that, with the extensive destruction produced, greater evidence of superimposed infection is not more frequently apparent. It is interesting to note that in some instances deep invasion was found; that is, the worm was well embedded in the solitary follicles, and no evidence of degenerative or exudative changes were manifested in the immediate vicinity of the worm, although small tracts of linear destruction forming the portal of entrance could be found (Fig. 3). Occasionally in a section, an ovum of the oxyuris is found deep in the mucosa. While it is possible that these may have been expressed from the parasite, the absence of the latter in the adjacent serial structure renders this less likely.

ETIOLOGIC RELATIONSHIP

The evidence of actual intramural invasion of the parasites into the mucosa and even submucosa of the appendix, with the destruction of tissue structure in their passage, indicates the capacity of the oxyuris worm to produce pathologic changes of a degenerative character in the appendix. Like *Endameba histolytica* or *Balantidium coli*, the manner in which the lesion is produced appears somewhat uncertain. Whether there occurs a mechanical destruction of structure or the production of a lytic substance capable of dissolving the cellular elements has not been determined. In either event, the parasites traverse from the lumen into the inner coats, and either per se or through the secondary bacterial invasions thus permitted or by both methods bring about degenerative, and at times exudative, changes. The latter exudate is usually representative of a chronic involvement, and thus produces the clinical manifestations that naturally emanate from such tissue changes. The fact that oxyuris worms may at times be found in the normal appendix does not negative the fact that they do actually produce disease of this structure either directly or conjointly.

COMMENT

There exists a broad divergence of views relative to the etiologic relationship of *Oxyuris vermicularis* to appendical lesions. There is also some variance in the character of cases presented. Frazier [3] reports an acute case with the appendix filled with oxyurids, and regards the parasite as a predisposing cause, occasioning blockage and favoring the invasion of *B. coli*. Innes and Campbell [4] tabulate seventeen positive cases. They believe that the parasite produces the lesion, and conclude that there is probably a classic type of oxyuris appendicitis. Wood [5] reports seven cases occurring in fifty-seven operations, designating the condition as appendicopathia oxyurica. He considers that the oxyuris produces typical catarrhal lesions and at times nervous symptoms out of all proportion to the lesion. Romain [6] states that the oxyuris enters into the appendix and causes disease through the inoculation of pathogenic micro-organisms into the mucosa. Still [2] states that 19 per cent. of healthy appendixes of children harbor oxyurids. Cecil and Bulkley [7] report a series of 129 unselected appendixes of children from 2 to 15 years of age, in which oxyurids were found in nineteen instances, or about 15 per cent. It is noteworthy that these authors observed the parasites only in acute instances. In fourteen, the histopathologic diagnosis was acute catarrhal appendicitis, and in three, acute gangrenous. In no instance was the appendix chronically inflamed. The changes in the acute catarrhal

4. Innes, J. A., and Campbell, A. E.: Parasitology 7:189, 1914.
5. Wood, W. A.: M.J. Australia 1:234 (March 21) 1914.
6. Romain, R.: Rec. de méd. et de pharmacie de Lyon, No. 63, p. 1, 1913-1914.
7. Cecil, R., and Bulkley, K.: J. Exper. Med. 15:225, 1912.

types consisted especially of swelling of the follicles, with greater or lesser amounts of epithelial cell destruction. In some instances, however, they report cellular elements, such as eosinophils and lymphoid cells, which seem representative of subacute and chronic inflammation. These authors have reviewed the literature up to

Fig. 1.—Transverse sections of oxyurids found in tip of appendix; the presence of some are seen in the lymphoid follicles; evidences of tissue destruction about the nematodes can be seen.

the time of their publication. Among other conclusions, they state that "when oxyuris occurs in a diseased appendix, they are in most cases the existing cause of the pathological changes found." Since they consider the pathologic condition present in the appendical lesions of children as acute, and as the greater number of instances reported in adults, including our own, demonstrates a cellular and connective tissue response of a subacute and chronic variety, it is not unlikely that these infections may exist over a period of years and thus eventually demonstrate a histopathologic picture of a chronic type in later life. Like Cecil and Bulkley, we have observed the parasites in the lymphoid follicles creating no exudative response to the area, but with degenerative changes in evidence. At times, exudative elements may be present about the nematode, but in these instances the presence of bacteria having a different chemotactic influence seems likely.

That the oxyuris produces pathologic changes in the veriform appendix seems indisputable. Their attachments to the mucosa, the hemorrhagic ulcerations occurring at times about these attachments and actual intramural invasion down to the musculature, and even penetrating this portion with the destruction of tissue in their route of transit, form definite evidence of disease production. These changes usually provoke a clinical and pathologic picture representative of a chronic or subacute form, as presented in such cases irrelevant of oxyuris invasion. That they may occur in the lumen of a normal appendix is also evident, but that they may remain in such a structure indefinitely without provoking pathologic changes is open to question, although it is conceivable that certain of these structures may not be vulnerable to the parasite. It is also probable that even in the absence of actual production of pathologic change, the oxyuris may at times give rise to appendicular colic. These later features, however, do not vitiate the fact that the oxyuris present in the appendix usually demonstrates a pathogenic rôle.

Whether or not the recognition of infection by the oxyuris in certain of the clinical cases of chronic appendicitis would save the patient from surgical procedure and place him within the power of medical therapeusis to heal seems still an open question.

In this connection, Harnett [8] reports a case wherein obscure symptoms existed with an eosinophilia of 10 per cent. Oxyuris was suspected, but the stool examinations were negative, even though santonin was administered. After operation, oxyuris was found in an inflamed appendix. Frazier [9] reports an acutely inflamed appendix filled with oxyurids, which were crawling out of the open end. No worms could be found in the stool after operation, even though a course of calomel and santonin was given. Orton [9] likewise reports an appendix somewhat thickened and slightly reddened, containing seventy-four adult female oxyurids and a number of males in which the examination of stools after operation and following a laxative was negative for worms and ova. Wood [5] does not consider that an anthelmintic could reach the worms and ova in the appendix. He considers that the danger of a delayed operation is greater than that of the operation itself. Armstrong [10] believes that treatment directed against oxyuris infection may save the patient from operation.

A consideration of this phase of the subject appears to us to necessitate two subdivisions: First, in acutely inflamed appendixes, even if oxyuris infection was known to exist, treatment with anthelmintics and purgatives would very clearly be contraindicated. The

Fig. 2.—Ulceration of appendix with presence of oxyurids, a cross-section of which can be seen in the depth of the ulcer, which extends into the muscularis; the excavation of the ulcer is marked, and a detached and elevated portion of the mucosa is shown.

lesion should be handled in a manner similar to acute appendicitis, due to any other cause. Second, in the

8. Harnett, W. L.: Indian M. Gaz. 57: 419 (Nov.) 1922.
9. Orton, S. T.: M. & Surg. Rep., Boston City Hosp., Series 15, 1905, p. 34.
10. Armstrong, A. W.: New York State J. Med. 16: 470 (Sept.) 1916.

obscure, low grade lesions with recurrent attacks, wherein the appendix is usually removed as a probable causative factor, it seems desirable that oxyuris infection should be primarily considered. In that event, careful and repeated stool examinations should be made and if found negative, similar examinations following the administration of an anthelmintic should be carried out previous to operating. If infection of oxyuris is found present, specific treatment along this line seems in order. It appears possible, however, in the light of reported examples, that oxyuris infection may exist in the appendix and such examinations at times be negative.

In regard to the latter division, it must be appreciated that it may not be possible to exterminate the oxyurids in the appendix, and especially those which have invaded the mural structures. Again, even though the parasites may be destroyed with treatment, the appendical lesion may possibly continue as the result of the pathologic condition already set in motion and

Fig. 3.—High power of ulcer shown in Figure 2; the depth of the ulcer is shown with a transverse section of an oxyurid; tissue destruction with granular detritus and cellular elements are seen surrounding and above the worm.

maintained because of concomitant bacterial factors that have secondarily invaded.

It appears logical that a proper opinion concerning the handling of the chronic cases, wherein oxyuris invasion of the appendix is considered, can be reached only after a series with this specific purpose in mind has been dealt with.

It seems remarkable that these parasites occur in the extent which they apparently do in the intestinal tract of even adult life. The frequency of the parasite in appendical lesions is also very striking. In France, Railliet [11] reports fifty-eight infections in 119 cases of appendicitis, or 48 per cent., while Brumpt,[12] in the same country, found oxyuris present in 3.5 per cent. of normal appendixes and 40 per cent. of all cases of appendicitis. In Germany, Hoepfl [13] reports their presence in 19 per cent. of all cases of appendicitis. In England, Innes and Campbell [4] report that 17 per cent. of inflamed appendixes examined showed oxyuris infection. In this country, Cecil and Bulkley [7] found 15 per cent., and we found approximately 19 per cent., making an average of about 17 per cent.

It is evident that insufficient attention has been given to the rôle played by *Oxyuris vermicularis* in the causation of appendicitis. This factor has been neglected by clinicians, surgeons and pathologists. The oversight is especially attributable to the pathologist, for if a series of 100 appendixes removed at operation for appendicitis are carefully studied for oxyuris invasion, the worms will most likely be found present in a considerable percentage of cases. Appendixes, like tonsils and adenoids, when received in the laboratory, are usually given only a cursory gross examination and then sectioned for microscopic study. In this manner, a great number of positive instances are not brought to light. Such an occurrence demonstrates the fact that it is of considerable importance to study the causation of the pathologic condition of all structures sent to the laboratory, as well as the tissue changes produced by the process of disease.

11. Railliet: Compt. rend Soc. de biol. **70**: 310, 1911.
12. Brumpt: Précis de parasitologie, Paris, 1910, p. 355.
13. Hoepfl: Arch. f. klin. Chir. **73**: 100, 1904.

SUMMARY AND CONCLUSIONS

Infestation with *Oxyuris vermicularis* occurred in twenty-two appendixes out of an uninterrupted sequence of 121 cases of operative appendicitis.

The study of the gross and histologic pathologic condition of the appendixes containing the oxyuris demonstrates conclusively that these nematodes possess a definite pathogenic rôle in the causation of the appendical lesion.

The failure of recognition of the oxyuris as a factor in the production of appendicitis is due in general to the lack of detailed gross and microscopic study of the veriform appendix.

It is important in all cases of chronic recurrent appendicitis to consider the likelihood of *Oxyuris vermicularis* as a causative factor.

Aside from the frequency of occurrence of the oxyuris in appendicitis, the widespread presence of these worms in the intestinal tract of adult life is not generally realized.

The observations on record of the frequent relationship of the oxyuris to appendicitis justifies a more general and thorough study of this subject.

1325 South Carrollton Avenue.

Raw Fruit and Uncooked Vegetables Good Food.—The benefits accruing from eating plenty of raw fruit and uncooked vegetables in the shaps of salads cannot be overemphasized: man is the only animal that fires his food, and the discovery of cooking is such a thing of yesterday in the history of the development of man that the argument that his digestive apparatus has "got used" to cooked food is hardly worth considering. There are many varieties of green vegetables from which salads can be made; a very delicious salad can be made from sliced raw cabbage and raw onion seasoned with oil and vinegar, yet how often does one see it? Watercress is a cheap and plentiful source of vitamin and is available nearly all the year round. Fruit is abundant and cheap in season, and every one should be instructed to eat freely of it daily. Avoid as far as possible stews, hashes and twice cooked meats; avoid especially such abominations as synthetic egg powders, custard powders, cornflours, polished rice and arrowroot. Eat porridge with brown sugar or treacle, and eschew vermicelli, macaroni and all highly milled white grains and flours.—Hallilay, Henry: *Practitioner* **114**:108 (Jan.) 1925.

THE VALUE OF DÉBRIDEMENT IN THE TREATMENT OF BURNS *

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Owing largely to the investigations of Cannon [1] and his co-workers in this country, the belief has come to be widely established that secondary traumatic shock

Fig. 1 (Case 3).—Appearance of burn on admission.

is due to an intoxication with protein cleavage products. Not only does it seem to have been conclusively proved that traumatized tissues may serve as a source of toxin formation, but the application of the principle of débridement, the removal of this traumatized tissue, has proved efficacious in the relief or prevention of shock. During the course of experiments [2] which appeared to indicate that diffuse peritonitis was a condition either very similar to or identical with traumatic shock, both in its genesis and in its manifestations, the question arose in my mind as to whether burned tissues might not serve as a source of toxin formation. It is a well known fact that patients suffering from severe burns may appear to be progressing well toward recovery, only to succumb several days later to what appears to be a form of intoxication.

So impressed was I by this possibility that, in 1921, a form of débridement was actually employed in the treatment of a severe burn, occurring in a child in my service in the Virginia Hospital. The report of this case is as follows:

CASE 1.—A boy, aged 9 years, admitted to Virginia Hospital, Aug. 2, 1921, twenty-four hours after being burned, seemed quite ill. The temperature was 103 F.; pulse, 120. A third degree burn involved the median and anterior aspects of both thighs, from the junction of the middle and lower third up over the inguinal region on the right, and over the inguinal region and to the anterior superior spine on the left.

Under ether anesthesia, the greater part of this area was cleanly excised with the scalpel, the dissection extending down to the apparently uninjured subcutaneous tissue. A dry dressing was applied.

Within six hours the temperature had fallen to normal, and the rate of the pulse had declined to less than 100. Accompanying these changes, there was a striking relief from pain and a distinct improvement in the patient's appearance. A healthy granulating surface soon allowed the application of Thiersch grafts, and the patient was discharged in excellent condition.

Oct. 27, 1922, the patient was admitted to Dooley Hospital, in the service of Dr. Carrington Williams. The contracting scar tissue had drawn the skin down over the penis and scrotum, almost completely hiding these structures. Two plastic operations by Dr. Williams afforded practically complete relief.

Several points deserve mention in connection with this case: the relief from pain; the rapid subsidence of temperature and decline in pulse rate, and finally, the speed with which healing took place, in contrast to the slow process of sloughing and subsequent repair seen in expectantly treated burns.

So impressed were we by the excellent results secured in applying débridement in this case that animal experiments, under the most humane and scientific conditions, were undertaken to determine whether a toxin was actually produced in the burned tissues and whether benefit could be observed to follow removal of this tissue. These experiments will be reported in

Fig. 2 (Case 3).—Appearance shortly after excision.

detail elsewhere; briefly, they served to show that in burns, as in traumatic shock, there occur an increased concentration of the blood, corpuscular count, and blood nitrogen, while the alkali reserve is not appreciably affected until late in the course of the intoxication. Accompanying these changes in composition of the blood, there is a gradual decline in the blood pressure.

* Read before the Southern Surgical Association, Charleston, S. C., Dec. 9, 1924.

1. Cannon, W. B.: Studies in Experimental Traumatic Shock, Arch. Surg. 4:1 (Jan.) 1922.

2. Willis, A. M.: Surg., Gynec. & Obst. 33:355 (Oct.) 1921.

In untreated animals, definite structural changes could be detected in the intestines, kidneys and suprarenals, agreeing well with the previous observations of Weiskotten [3] and Bardeen.[4]

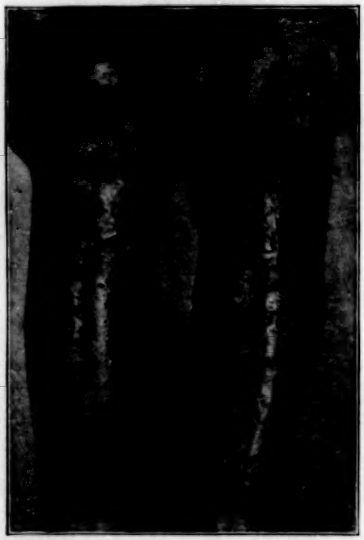

Fig. 3 (Case 3).—Appearance of healed surface.

Where excision of the burned areas was practiced, the blood changes were absent or very slight; recovery was much more rapid, and when the animals were killed, there was no evidence of structural damage in the organs mentioned as showing changes in the untreated controls.

Fig. 4 (Case 3).—Appearance of burn on admission.

From these experiments, in conjunction with the favorable outcome in the clinical case described, it seemed amply justifiable to make application of the principle of débridement in additional cases, and in this view, support was added by the appearance of the paper by Robertson and Boyd,[5] reporting experimental work carried out along somewhat similar lines. Up to the present, six cases have been treated by as complete removal of the burned tissue as possible, with recovery in all but one instance. The histories of these cases were as follows:

Case 2.—A. W., a negro laborer, aged 33, admitted to St. Philip Hospital, May 14, 1924, had fallen into a vat of boiling water on his hands and knees. Shoes and gloves had protected the hands and feet; but extending from the ankles up to the junction of the upper and middle thirds of both thighs, and from the wrists almost to the shoulders, there was a second degree burn, extending to the dermic layer. Scattered over the patient's trunk, there were numerous areas from 2 to 40 cm. square showing second and third degree burns.

Fig. 5 (Case 5).—Burned area excised in toto.

Six hours after the accident, the patient was etherized, and all the larger areas were scrubbed thoroughly with brushes, the epidermis being thus removed. A striking feature of this case was that the man complained bitterly of the pain in several of the small burns that had not been scrubbed, but apparently experienced no discomfort from the larger burns, which had been subjected to treatment.

Fig. 6 (Case 5).—Present appearance of arm; ulna is exposed.

Recovery was rapid; the patient was discharged, June 14, one month after admission. There was loss of pigment over a considerable part of the cutaneous surface. This pigment loss did not occur in all the burned skin.

Case 3.—W. B. F., a white man, aged 58, a stone-cutter, admitted to the Memorial Hospital, Nov. 17, 1923, had fallen on his knee into an open fire, while intoxicated. Soon after admission, delirium tremens developed, rendering it necessary to postpone operation until November 24, a week after the burn was received. A third degree burn, involving the skin, subcutaneous tissue, fascia, and periosteum of the tibia, extended from just above the ankle to almost the middle of the left thigh; on the right, a third degree burn was present

3. Weiskotten, H. G.: Fatal Superficial Burns and the Suprarenals, J. A. M. A. **69**: 776 (Sept. 6) 1917; Histopathology of Superficial Burns, ibid. **72**: 259 (Jan. 25) 1919.
4. Bardeen, C. R.: J. Exper. Med. **11**: 501, 1897.
5. Robertson, Bruce; and Boyd, Gladys: Toxemia of Severe Superficial Burns in Children, Am. J. Dis. Child. **25**: 163 (Feb.) 1923.

around the knee. The burned tissues were cleanly excised under gas-oxygen anesthesia. December 22, there was a cleanly granulating surface, and Thiersch grafts were applied. Jan. 2, 1924, a 6 inch sequestrum was removed from the right tibia. The patient was discharged in excellent condition, March 6. The photographs were taken just before operation (Fig. 1); two weeks after operation (Fig. 2), and the last one (Fig. 3) a week before discharge.

CASE 4.—E. D., a white man, aged 39, a brakeman, admitted to Memorial Hospital, May 3, 1924, had been caught in a burning house. Five days later, he was delirious and seemed very toxic; the temperature was 103.5 F.; the pulse, 100. There was a third degree burn involving half the circumference of the chest and all of the arm and forearm on the right. Under ethylene anesthesia, the burned areas were thoroughly excised, with the result that very free bleeding occurred. Immediately after this treatment, the patient received a transfusion of 500 c.c. of citrated blood. The immediate improvement was striking; two days later (May 10)

Fig. 7 (Case 6).—Extent and appearance of burn four days after admission.

it was noted that he was perfectly rational and that his condition was excellent. The following day, however, he gradually became toxic and delirious, dying, May 14.

The treatment in this case resembles that suggested by Robertson; namely, exsanguination and transfusion, but the amount of blood lost before transfusion was scarcely sufficient to justify terming it "exsanguination." It is quite possible that the eventually fatal termination might have been averted if the operation had been undertaken more promptly.

CASE 5.—D. W., a negro laundress, aged 30, admitted to St. Philip Hospital, Nov. 1, 1924, had had her hand caught and held in a hot mangle for about fifteen minutes, only the flexor surface coming in contact with the hot metal. Five days after the accident, there was present a third degree burn of three fourths of the flexor surface of the forearm and about half of the palm. The burned tissue was excised down to and including the fascia. The illustrations show the appearance of the burn at admission (Fig. 4); the size of the mass removed at operation (Fig. 5), and the appearance of the arm immediately after operation (Fig. 6).

CASE 6.—C. S., a white girl, aged 4 years, admitted to the Dooley Hospital, April 15, 1924, had been burned by her clothing becoming ignited. There was a third degree burn of the entire back, buttocks, posterior aspect of the neck, the axillae, and the outer aspect of both arms. Nine days later,

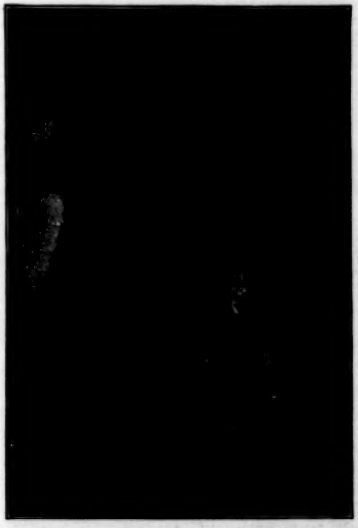

Fig. 8 (Case 6).—Appearance after excision; healing and skin grafts well under way.

there was a beginning bronchopneumonia; the temperature was 104 F.; the pulse, 160; the child seemed critically ill. Physiologic sodium chlorid solution was injected intraperitoneally, and under ethylene anesthesia, the burned areas were excised as rapidly as possible by three operators. Immediately after operation, transfusion was practiced. The coexistence of the pulmonary involvement rendered convalescence slow and tedious, but the child eventually made an excellent recovery, being discharged, July 21. The illustrations show the large size of the burned area (Fig. 7); the appearance soon after the application of Thiersch grafts (Fig. 8), and, finally, almost complete healing (Fig. 9).

CASE 7.—M. H., a negro, aged 45, admitted to the St.

Fig. 9 (Case 6).—Result eight months later.

Philip's Hospital, Nov. 12, 1924, had fallen against a hot stove while in an epileptic seizure, receiving a third degree burn over an area of the upper face and head of approximately 506 sq. cm. The burn took in an area vertically from mastoid to mastoid forward over the face at the level of the zygomatic arch and running down to the tip of the nose and upward over the forehead and frontal region of the scalp, including laterally both parietal and temporal regions. The patient had several epileptic seizures prior to the operation. On the sixth day, under gas anesthesia, Dr. E. J. Morrissey excised all the scalp over the frontal region and down to the temporal muscle, over the parietal and temporal region; practically all the facial muscles with the exception of the orbicularis oculi were excised over the burned area.

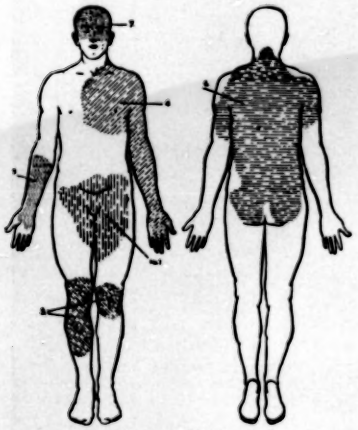

Fig. 10.—Areas of burns excised.

These cases, even in the absence of the confirmatory animal experiments, seem to offer ample justification for the utilization of the principle of débridement in the treatment of burns. By as complete removal of the dead tissue as possible, not only is the toxemia relieved, but the pain is much reduced or entirely eliminated, and, finally, local healing is much hastened.

Work Among Negroes.—The North Carolina State Board of Charities and Public Welfare has organized a bureau for work among negroes, as the beginning of what is hoped will be a state-wide program of public welfare for negroes.

DILATION VERSUS GASTROSTOMY AS A PALLIATIVE TREATMENT OF CARCINOMA OF THE ESOPHAGUS

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Carcinoma of the esophagus is uniformly fatal, and in treating the disease, efforts should be directed along lines of greatest palliation. The forms of treatment generally employed are gastrostomy and mechanical dilation of the malignant stricture. If gastrostomy is performed early in the disease, the operative risk is relatively slight; but if obstruction is at all pronounced, the mortality increases to at least 10 per cent., in the hands of the average surgeon. The operation necessitates hospitalization for a period of from ten days to three weeks, and a nurse, relative or friend is usually required in constant attendance during the remaining days of the patient's life. Although the details of the operation and the possible benefits from it may have been fully discussed, the patient is likely to think that the placing of the tube in the stomach is a curative measure, or that other treatment may be more satisfactorily employed when the esophagus is put at rest. In both of these beliefs he is doomed to disappointment, and very soon after operation the care of the tube with the unsatisfactory method of feeding becomes a burden to him and to all associated with him. If the obstructive lesion is located at the cardia, metastatic implants to the abdominal wall may further increase the patient's discomfort. Certain advocates of gastrostomy urge

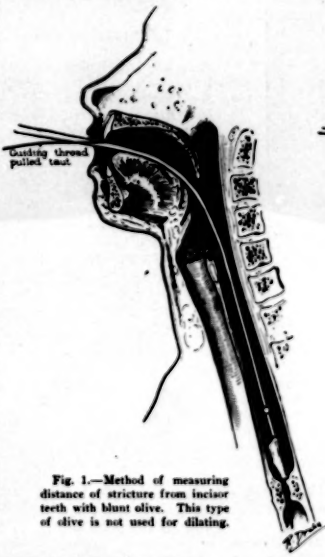

Fig. 1.—Method of measuring distance of stricture from incisor teeth with blunt olive. This type of olive is not used for dilating.

Fig. 2.—Hazard of passing olive without a guiding thread. Perforation is almost certain to occur if pressure is used.

that it be done early. This, of course, decreases surgical mortality, but prolongs a discomfort, which is unnecessary. If gastrostomy is performed at all, it should be postponed until esophageal closure is almost complete.

Fig. 3.—Method of dilating, using wire spiral guide passed over silk thread, making puncture perforation impossible.

In the Mayo Clinic, it has been our custom to dilate malignant strictures of the esophagus with graduated sounds, and we are convinced that this can be done with greater safety, much less discomfort, and far greater relief than gastrostomy. The arguments that have been advanced against dilation are that it is dangerous, that it does not relieve dysphagia, and that it hastens metastasis. In 502 dilations for cancer of the esophagus at the clinic in the last six years, there have been three fatalities, due to splitting of the esophagus; and during the same period there have occurred three fatal spontaneous perforations in a group of seventy-five cases in which dilation was not performed.

Fatal hemorrhage following instrumentation has never occurred, although hemorrhage is a frequent terminal event in esophageal cancer. The reason for the insignificant mortality following dilation is that a previously swallowed twisted silk thread is used as a guide in introducing sounds, and this effectually prevents perforation from puncture, the usual complication following the passage of an unguided dilator (Figs. 1, 2 and 3). The second objection to the passage of sounds, that dilation does not relieve dysphagia, has not been substantiated in our experience (Fig. 4).

The majority of patients with dysphagia are markedly relieved by dilation of the stricture with a 45 French olive, and deglutition remains fairly normal for from six to eight weeks. One patient had not had a return of dysphagia two and one-half years after a single dilation. Many live in comfort for several months, and if closure recurs, the stricture may be dilated again.

The treatment does not require hospitalization, and the patient is permitted to return home the day after instrumentation. As the patient can then swallow without difficulty, there is no necessity for especially prepared foods, as is the case with tube feeding after a gastrostomy. The last argument against dilation may possibly be true, but death from metastasis is no more to be dreaded than from the original lesion; the chance of disseminating the disease, therefore, is hardly sufficient ground for supplanting dilation with gastrostomy.

Dilation should not be attempted in the presence of an esophagobronchial or an esophagotracheal fistula; in such cases gastrostomy would be justifiable. Patients with malignant lesions of the upper esophagus, extensive metastasis to the cervical glands, and paralysis of one or both vocal cords, are not usually benefited by the passage of sounds, nor do they derive much comfort from gastrostomy. In cases of gastric cancer, if the lesion is located at the cardia and obstructs the lower esophageal opening, very little relief follows the passage of a sound, and in cases such as this a gastrostomy may lead to metastasis to the abdominal wall.

Fig. 4.—Complete esophageal obstruction from carcinoma of the esophagus dilated to 45 French. A single dilation gave complete relief from dysphagia for more than a year. A metastatic gland is apparent in the right cervical region. Photograph was made one year after dilation.

We believe, therefore, that gastrostomy is seldom indicated in cases of esophageal cancer, and that mechanical dilation affords the greatest palliation.

VALUE OF ELECTROTHERMIC METHODS IN THE TREATMENT OF MALIGNANCY *

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During the last decade, the successful treatment of cancer has been greatly facilitated by improvements in our physical methods; namely, roentgen ray and radium. General surgeons have paid no little attention

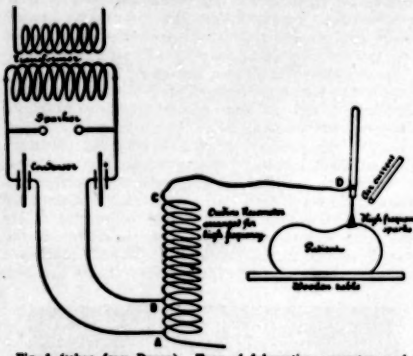

Fig. 1 (taken from Doyen).—Type of fulguration apparatus used by Pozzi. The current from the supply circuit passes through the primary coil of the transformer, thus inducing a current of a much higher voltage in the secondary coil. The condenser and spark gap (sparker) serve to increase the frequency by thousands. The current coming from such a combination is passed through *A B*, the primary portion of the Oudin resonator. At *C*, the terminal of the Oudin resonator, the induced current is taken off as a unipolar one to the patient through the needle *D*. The needle is held at a distance from the patient so that the sparks come from it in a spray. The penetration here is shallow.

to heat, a most potent factor in destroying neoplastic cells without serious damage to surrounding healthy tissues, and with a resultant slowly healing, indolent, sclerotic ulceration, although it has not been universally accepted and used. The reason for the apparent general discard of so powerful a therapeutic agent has undoubtedly been the lack of any efficient apparatus and technic to cause penetration of the heat sufficiently deep to kill the cells at a distance from the point of application. Boiling water, superheated steam and aerocauterization have fallen into disuse because accurate and convenient application is impossible and penetration is limited. Other heat producing apparatus, as the Paquelin and electric cauteries, destroy cells at the point of contact and for a short distance beyond, their use being limited, however, by the charred and carbonized tissue, which acts as a barrier to the further penetration of the heat.

In electrodesiccation and electrocoagulation, we have a most efficient method of heat production and distribution throughout the diseased area. Here the heat is generated in the tissues by their resistance to the passage of a high frequency electric current. The apparatus used is so delicate and yet so powerful that any range of current strength may be obtained, varying from one giving the finest, almost invisible spark for the treatment of conjunctival lesions, to a heavy, flame-like spark which demolishes massive tumors. My aim here is to furnish a comprehensive summary of the underlying electrical principles involved in this method of treatment of accessible neoplasms, together with a study of the clinical results and the further possibilities of relief to cancer sufferers. I will endeavor to make this summary as nontechnical as possible.

The eyes of the medical world were turned toward the use of these physical agents in the treatment of cancer when Pozzi announced to the Paris Academy of Medicine, in 1907, "the cure of malignancy" by the action of sparks from the terminal of an Oudin resonator. This method of electrotherapy he termed fulguration. A resonator is a coil giving a balance between capacitative (condenser) and inductive (secondary coil) reactance. A state of resonance is said to exist when these are equal. The maximum amount of current will then flow, because the only resistance in the line is ohmic resistance due to the wire itself. An Oudin resonator, named for its inventor, is a long coil of wire, having no core of iron in the center as in the usual transformers which give a faradic current. A portion of the coil is connected in the circuit of an alternating step-up transformer, increasing voltage at the expense of amperage or vice versa, through a condenser and a spark gap, and is called the primary portion of the coil. In the remaining turns of the resonator, which form the secondary coil, a secondary current is induced, having a much higher voltage (pressure of current) with corresponding drop in the amperage (amount of current). Now, since the current in the primary coil is an alternating one, the induced current in the secondary coil is also alternating; but, by virtue of the function of the spark gap, the frequency has been increased by thousands. The amount of voltage and amperage varies with the ratio between the number of turns in the primary and secondary coils. With the consequent increase in frequency, the wave length naturally becomes shorter. In fulguration, the induced secondary current which comes from the secondary coil of the Oudin resonator

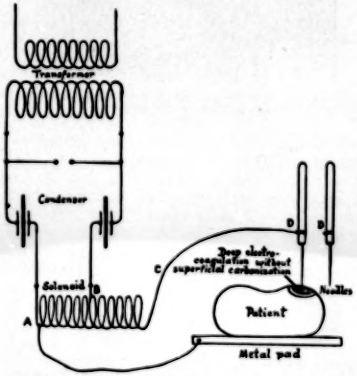

Fig. 2.—Electrical principles of our present electrothermic or electrocoagulation machines. The current from the transformer-condenser circuit passes through *A B*, the primary coil of the resonator (solenoid) as in Figure 1. The current for therapeutic use is here bipolar, being taken from the resonator at *A* and *C*, utilizing the entire coil as a secondary one. *A* is connected by a wire to the inactive electrode placed beneath the patient, and *C* to the needle *D*, the active electrode. The deep penetration of the electrocoagulation, in contrast with the shallow action of fulguration, may be noted.

* From the Howard A. Kelly Hospital, Inc.
* Read before the Baltimore City Medical Society, Dec. 5, 1924.

is the one used. It is unipolar in character, being taken from the one terminal of the secondary coil distal to the primary coil, and is of high frequency (500,000), high voltage, and an amperage of from 250 to 300 ma., with a wave length of 600 meters. As is so often true with new methods, so it was with fulguration: its actual value and limits of usefulness were soon found.

Let us now go back in history to d'Arsonval, who had shown that muscular contractions, intolerable with wave lengths of from 1,500 to 2,000 meters, diminish in proportion to the reduction in wave length and consequent increase in frequency. He discovered that there was no muscular contraction with a self-inducing transformer type of oscillating current from a small solenoid (Oudin resonator) with a wave length of less than 100 meters. The d'Arsonval current is similar to the one described above, but with a shorter wave length. In such cases, only heat was produced. This heat production he called "thermopenetration" and "transthermie."

With these facts as a basis, Doyen[1] proceeded to improve on the fulguration machine, and, with the help of the engineers of the Maison Gaiffe in Paris, made an apparatus giving a current of high amperage (4 or 5 amperes), high frequency (700,000), and short wave length (from 400 to 500 meters). The step from the fulguration machine of Pozzi to the electrocoagulation apparatus of Doyen was a short one. Instead of using a part of the Oudin resonator as the primary coil and the remainder as the secondary coil, from the end of which the current was taken off as a unipolar one, Doyen shunted across from one wire, leading to the distal end of the primary coil to the distal end of the secondary coil, using the whole resonator as a secondary coil. He also made the current bipolar by running a second wire from the other end of the Oudin resonator to a moist pad placed beneath the patient.

These steps finally bring us to present day electrocoagulation machines. In these newer apparatus, shunting is not done, but a part of the Oudin resonator is taken as the primary and the entire resonator as the secondary coil, thereby making it an autotransformer (a transformer with single winding). By varying the ratio between primary and secondary turns of the Oudin coil, varying amounts of amperage and voltage may be obtained to meet the demands of the surgeon. In such a current (which is, of course, alternating), the oscillation waves are "damped"; that is, they are of "decreasing maximum amplitude at each reversal, owing to the continual loss of energy in the resistance of the circuit." The machine used in the study here reported gives a current of 30,000 volts and 300 milliamperes, with a frequency of oscillation of 1,250,000 and a wave length of 240 meters.

There are two effects of this current on the tissues, depending on the amount (amperage) and pressure (voltage) of current employed. The one is a dehydration or desiccation and consequent shrinking of the cells (electrodesiccation), the other an actual coagulation of the tissue proteins into a homogeneous cell mass (electrocoagulation). Although desiccation is usually accomplished by a unipolar current and coagulation by a bipolar one, it does not hold that desiccation means treatment with a unipolar, and coagulation with a bipolar current. On the contrary, heavy unipolar currents, stronger than those obtained by the old fulguration machines, may cause some coagulation, and mild bipolar currents may cause only desiccation. These effects of drying and coagulating are the basis for the nomenclature adopted by William L. Clark[2] of Philadelphia. George A. Wyeth[3] of New York, in an attempt to unify under one heading the names applied by Clark and others, coined the word, "endothermy," meaning "heat within." This term is descriptive of the method of heat formation. Both Clark and Wyeth have reasonable grounds for their opinions, but I see no good reason why electro-endothermy, or endothermy, for short, cannot be used to designate the types of heat production in the body tissues with the subheadings electro-endothermic desiccation and electro-endothermic coagulation, or, for the sake of brevity, electrodesiccation and electrocoagulation. This would bring both method and effect into use in the nomenclature, thereby unifying the heretofore confusing multiplicity of names.

Fig. 3.—Growth behind right ear before treatment.

Whether we use the term endothermy or electrocoagulation and electrodesiccation, one great difference between this and other forms of applying heat, such as the actual cautery and Paquelin cautery, must be borne in mind. With the latter, the heat is applied by a hot object from without, penetrating only superficially. As has been shown by Clark, the carbonization produced by our various cauteries acts to prevent the heat from reaching any great depth. In the electrical methods described, the heat is formed in the tissues by their resistance to the passage of the current, its

1. Doyen, E.: Surgical Therapeutics and Operative Technique, New York, William Wood & Company 1: 439-502.

2. Clark, W. L.; Asnis, E. J., and Morgan, J. D.: Clinical and Histological Observations in the Treatment of Neoplastic Diseases by Combined Methods, Atlantic M. J. 27: 541 (May) 1923; Electrothermic Methods in the Treatment of Neoplastic and Other Lesions with Clinical and Histological Observations, Radiology 2: 233 (April) 1924. Clark, W. L.: Cancer of the Oral Cavity, Jaws and Throat, J. A. M. A. 71: 1365 (Oct. 26) 1918; Chapter on Desiccation and Coagulation, Keen's Surgery 8.

3. Wyeth, G. A.: The Endotherm, Am. J. Electrotherap. & Radiol. 41: 145 (May) 1923; Endothermy in the Treatment of Accessible Neoplastic Diseases, Ann. Surg. 79: 9 (Jan.) 1924; Endothermy—A Surgical Adjunct in Accessible Malignancy and Precancerous Conditions, Surg., Gynec. & Obst. 36: 711 (May) 1923; Endothermy, the New Surgery as Applied to Accessible Epidermoid Carcinoma, Boston M. & S. J. 191: 662 (Oct. 9) 1924.

depth of cell destruction being proportional to the strength and kind of current used. An increase in the voltage gives more force with which to carry the amperage; if the amperage is then increased, more heat is developed, and the coagulation and secondary sloughing is much deeper. In other words, as the amperage is increased to produce heat, the voltage must be increased to carry it into the tissues.

THE ENDOTHERM KNIFE.

The endotherm knife (Wyeth) is a special form of apparatus, the field and limitations of which are not demonstrated as yet. I use it frequently in removing moles, warts and other small skin tumors, and find it helpful in doubtful lesions of the tongue and lip. It may be used in opening the abdomen and amputating breasts, with a diminished amount of bleeding and a possible reduction in the danger of disseminating the disease, owing to the sealing of capillaries and lymphatics. An interesting and important feature is that healing by first intention is the rule.

The apparatus itself is similar to the radio apparatus in electrical construction, the current being an undamped one, as opposed to the current of electrodesiccation and electrocoagulation. In an undamped current the oscillation waves are all of equal amplitude, there being no variations with the reversals of the alternations of the current. The endotherm knife current is of higher frequency (1,500,000), lower voltage (500 volts) and lower amperage (5 milliamperes) than the current of desiccation and coagulation. It

Fig. 4.—First step in treating accessible malignancy: A line of coagulation is thrown around the growth at its margin (circumvallation) by inserting the needle at various points so that the areas of coagulation coalesce, thus shutting off blood and lymph drainage. A small zone of normal tissue is coagulated but not blistered.

is produced by passing a current from a transformer and condensors through two De Forest tubes (three electrode vacuum tubes). Experimental evidence shows that the complex protein molecule of the body cells is broken down by this current. This molecular disintegration is an entirely different effect from that observed with the damped current spoken of above.

Grossly, the cut edges are barely seared over. Microscopically, there is a fine line of molecular decomposition appearing as carbonization, beneath which there is a slight amount of coagulation and desiccation resulting from a little heat developed. This very fine line of changed tissue, being only about 0.1 mm. in thickness, is not sufficient to prevent healing by first intention. Occasionally a little serum collects in the incision, but is easily cared for.

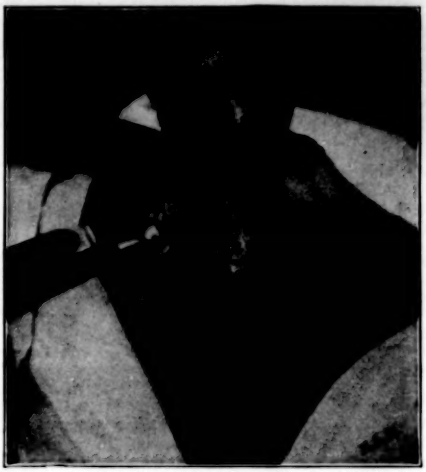

Fig. 5.—Second step: coagulation of the tumor itself.

The "knife" is an inaccurate term, so far as designating the type of instrument used. The cutting electrode is not a knife in the sense of a sharp edged instrument, but an ordinary cambric needle held by a suitable handle. The tissues fall apart under the touch of the "acusector," there being no need of pressure as in using a scalpel; in fact, pressure obliterates the arc necessary to cutting, only a little coagulation then taking place.

TECHNIC

The essential feature of success in the use of electrodesiccation and electrocoagulation is the development of accurate judgment as to the extent of the disease, and a thorough knowledge of the current being used and the extent of the after-slough with the chosen current. This is attained only by practice.

The technic in itself is quite simple. In large tumors a general anesthetic, such as gas or ether, is preferable. In case ether is used, it must be removed from the room for at least a minute before the current is turned on. If this precaution is observed carefully, there is no danger of explosion, even when working about the head or oral cavity. The hypodermic administration of scopolamin, $\frac{1}{150}$ grain, morphin, $\frac{1}{4}$ grain, and atropin, $\frac{1}{150}$ grain, alone or prior to anesthesia, is of great assistance. These drugs may also be used with local or regional anesthesia. In smaller epitheliomas

and in benign growths, local injection of a 1 per cent. solution of procain is satisfactory.

The older workers used disk or flat metal applicators for the active electrodes, the size to suit that of the lesion to be treated. Doyen employed olivary, cylindric and semi-insulated applicators for work in cavities such as the cervix and rectum. These various forms have been generally discarded, the ordinary cambric needle being adopted for surface treatments, vaginal, cystoscopic, rectal and oral cases being treated with needles of varying lengths and shapes, carrying rubber insulation to within a half inch from the tip. The inactive electrode consists of a large moist pad about 8 by 12 inches, placed under the back or buttocks of the patient. The construction of this pad is simple but important. The wire leading from the electrical machine is attached to a piece of thin sheet copper or heavy wire mesh. The latter is preferable, as it molds to the irregular surfaces of the body more readily. This is essential, for, if any portion of the pad is closer to the skin than another, a spark and consequent skin burn will result. One should remember, therefore, to have the current evenly distributed throughout the inactive electrode, thereby spreading it and avoiding such a burn. The metal parts of the pad are covered with several layers of gauze or, better, asbestos paper, which in turn is covered by linen cloth, the back being insulated from the operating table by sheet rubber. The entire pad is then moistened and placed in a moistened linen pillow case, which can be changed between patients.

Before the needle is applied, the strength and quality of the current are tested on a piece of metal. When the

Fig. 6.—Fourth step: The third step, that of curetting away the tumor as a mass of dead débris, has been taken. The fourth step consists in sparking over the base, insuring a perfectly dry, sterile surface. The area is contracted and flattened.

desired quality is obtained, the needle is inserted into the tissue and the current turned on, it being varied a little to meet the needs of the individual case. In treating large areas of disease, one should always begin by throwing a line of coagulation around and beneath them where possible so as to cut off lymph and blood drainage from the part. This is given great emphasis by Clark and Wyeth and is most important. Tissue can now be removed for diagnosis with safety. The entire tumor is next thoroughly coagulated and removed as a mass of dead débris.[4]

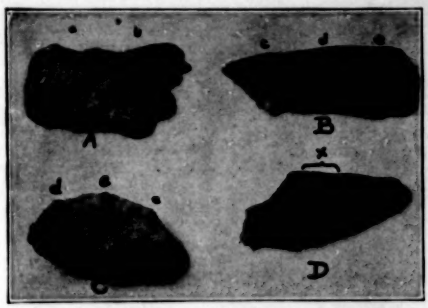

Fig. 7.—Effect of the current in different tissues, *A*, in abdominal fat, *B* in beef and *C* in fibroid tumor. In *A*, the chief visible effect is in the skin, the fat containing so much semisolid material that coagulation had not become marked in the length of time the needle was inserted. At *a*, the skin was cut with a scalpel and at *b*, with the endotherm knife. In *B* and *C*, the needle was inserted for fifteen seconds at *c*, thirty seconds at *e* and sixty seconds at *d*. In *D*, area *x* is a piece of beef treated with electrocoagulation without charring.

Overtreatment must be continually guarded against, for destruction of tissue goes far beyond the area of white coagulation. With a strong bipolar current, there is coagulation from all sides and point of the needle for from 0.5 to 1 cm.; but in a few days death of the cells beyond this point occurs. This unprecedented deep penetrating effect of electrocoagulation must be borne in mind in treating growths near vital structures or large blood vessels. I have seen, for example, a case of extensive posterior tongue cancer develop a profuse secondary hemorrhage, in spite of a preliminary ligation of the lingual artery.

It is important to emphasize the use of the microscope in checking up the result of the treatment. In case the trouble is not eradicated by the first treatment, a second or third may be carried out with no fear of causing a slowly healing, painful burn in the normal tissue, as in repeated irradiation of skin lesions with the roentgen ray or radium. It is comparatively simple to take a bit of suspicious granulation tissue with some variety of tissue clippers and have a frozen section made, confirming the diagnosis. If disease is present, it then remains to destroy the small areas of active trouble under local anesthesia.

In the case of small and superficial growths, all that is necessary is to insert the needle, turn on the current and, when the disease is white, stop the treatment. With this type of case, healing is assured in from two to four weeks, depending naturally on the size and depth of the lesion. With large cancers, plastic operations are of great help in hastening a good cosmetic result. A great advantage of this method over roentgen

4. It is not good technic to carbonize the tissues. This can be avoided, as shown in Figure 7, by moving the needle from place to place. In *B* and *C*, carbonization has resulted because the needle was allowed to remain in one place too long. After thorough coagulation, the heat continued its action until the tissues were charred. If, after coagulation of the tissues adjacent to the needle, it is reinserted in another area until it, too, is coagulated, and so on until the entire tumor is treated as in *D* of Figure 7, there will be no carbonization.

ray and radium is seen in the rapidity with which healthy granulations spring up after the slough has been removed, giving a splendid surface for skin grafting. There is none of the slowly healing, indolent ulceration so frequent with radiation therapy.

In superficial diseases, as eczema and mild keratoses, sparking is used. Here it is not necessary to thrust

Fig. 8.—Basal cell epithelioma of nose after desiccation: The cancer cells are shriveled and elongated, but retain their nuclei and cell walls.

the electrode into the skin, but it is preferable to hold it away, allowing a spark to form which will then cause only superficial desiccation.

HISTOLOGY

Figures 8, 9, 10, 11 and 12 confirm the findings of Drs. William L. Clark and E. J. Asnis of Philadelphia in regard to the microscopic changes caused by electrodesiccation and electrocoagulation. The process in desiccation is, as the name implies, one of drying. The heat is not sufficient to cause marked changes in the cell structure so much as in the water content. The cells are actually dried out. The cancer cells are shriveled and elongated, but their cell characteristics are still discernible. The connective tissue stroma is also contracted and shrunken, so that the nuclei appear closer together.

The current used in electrocoagulation is one in which the amperage is high, giving a heavier, hotter and more penetrating current. The effect is here also most marked in the epithelioid cells, which lose all their cell structure, being coagulated by the heat into a homogeneous granular débris. With the usual amount of coagulation sufficient to remove a tumor successfully, the stroma cells retain to a greater or lesser degree outlines of their cellular structure; but here the changes are more marked than those found after desiccation, and hyalinization is common. If the current is applied for a little longer time, complete coagulation of all cells, stroma as well as cancer cells, will be observed. The blood vessels are full of clotted blood, explaining the lack of bleeding.

CLINICAL STUDIES

Benign minor lesions of the skin, as keratoses, moles, warts, corns, callosities and small epitheliomas, yield readily to electrodesiccation. The strength of the current should, of course, vary with the size of the growth; but usually with the smaller lesions it is quite mild, whereas the larger ones require a heavier voltage and amperage. A good criterion of sufficient treatment is to leave the needle in the lesion until the spark, resembling a flame, has penetrated throughout it, thus literally lighting up the tissue. In larger tumors of this group, the needle is moved from place to place until the entire growth has been treated. One must be careful not to blister the surrounding skin, as a painful ulcer will result. In from five to seven days, the small benign lesions dry up and come away; with larger ones and small epitheliomas (1.5 cm. in diameter or less), from one to three weeks is required for complete healing. In this group of cases, the percentage of cures with one treatment is very high. Occasionally a second treatment is necessary.

In the treatment of large epitheliomas, electrocoagulation is essential. It is to be relied on alone in a number of cases, but in the more advanced, the best results are obtained when it is combined with one form of radiation therapy. In patients in whom gland metastases have already developed, this is obviously imperative. Here, as in small epitheliomas and benign tumors, the active electrode can be an ordinary needle, although in some situations a specially shaped needle is used, particularly when working in a cavity, such as the mouth, throat, bladder or vagina. The active electrode is thrust into the area to be treated to a depth depending on the thickness of the growth, and the current turned on and allowed to continue until the cells surrounding the needle are killed. When this point is reached, the tissue has either boiled (in vascular

Fig. 9.—Squamous cell carcinoma of face before treatment.

tumors) or coagulated to a semidry, whitish, cheesy material (in drier growths). The needle is now removed to an adjacent part, and the process repeated. In this manner, large tumors may be entirely destroyed; but one should always give a wide margin, going well beyond the confines of the malignant cells.

Occasionally, inflammation follows endothermy and varies proportionally to the amount of irritation of the

surrounding tissues by the current. I have removed large malignant lesions from the face or hand with little or no pain and followed by the prompt formation of health granulations. On the other hand, in two of our nurses, I removed corns by the method outlined above; and, contrary to previous experiences, there resulted painful, ulcerating, slowly healing sores, the

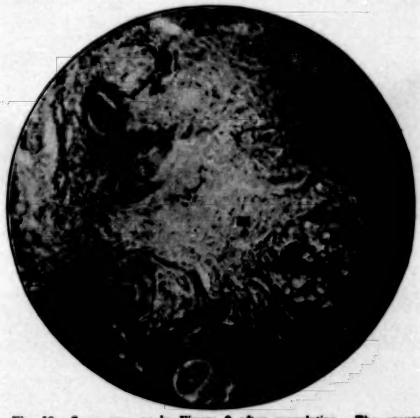

Fig. 10.—Same area as in Figure 9 after coagulation. The groups of epithelial cells have been converted into masses of homogeneous cell débris. The stroma cells appear as lifeless hyalinized tissue.

pain probably being due to pressure of the shoes, and the congestion caused by standing. In these two cases, however, there was blistering of the surrounding tissues, showing overtreatment. It seems to me that the blistering of otherwise normal tissue would account for the pain and inflammation following some cases treated with electrothermic methods.

An example of the effect of electrocoagulation on skin growths is shown in an interesting patient from South Carolina:

A man, aged 80, had a discharging sinus over the left malar eminence, where a basal cell epithelioma had been surgically removed two years before. Microscopic examination of clippings taken showed a recurrence of the cancer. The area was then treated with desiccation under local anesthesia, but this did not suffice to eradicate the disease, as five days later active growth was revealed by clippings taken. Four days after this, he was given scopolamin and morphin hypodermically an hour before operation. At operation, a 2 per cent. solution of procain was injected and the entire area thoroughly treated with coagulation. A 2 per cent. solution of dichloramin-T in oil on the dressings cleaned away the slough, stimulating healthy granulation. Repeated microscopic examination of tissue from time to time after the operation showed no malignancy. A pinch graft, which was done, soon covered the entire area with normal skin.

In treating growths of the tongue, buccal mucous membrane and floor of the mouth, electrodesiccation and electrocoagulation are of exceeding great value. The more superficial lesions are treated with desiccation and under local anesthesia. With large indurated tumors, coagulation is essential and is best done under general anesthesia. Frequently one employs coagulation in conjunction with radium in cases of this type, although it can be used effectually alone.

A man of middle age had a squamous cell epithelioma of the floor of the mouth in the midline just posterior to the incisor teeth and extending back to the frenum. It was about 1.5 cm. in diameter and 0.5 cm. in elevation. Implantation of radium emanation points was first done. Ten days later the growth and the adjacent tissues were removed by electrocoagulation, to avoid the slowly healing, painful ulceration common to heavy implantation of radium emanation. This also gave extra precaution against recurrence. The inferior dental nerve on each side was blocked, and all the lower front teeth were removed. A line of coagulation was then circumscribed about the growth, and the entire mass thoroughly coagulated and removed as dead cell débris. During the sloughing period that followed, part of the inferior arch came away. Healing took place in about six weeks. Six months have elapsed, with no sign of recurrence.

In small growths of the tongue, particularly when the diagnosis is doubtful and tissue is desired for microscopic examination, a line of coagulation is thrown around and beneath the lesion under local anesthesia. The tumor is then removed with safety and examined. The circumscribed line of coagulation about the growth prevents dissemination, at the same time allowing the center to be removed in its normal state for study. In treating larger tumors of the tongue, secondary hemorrhage must be guarded against by a preliminary ligation of the lingual artery in the neck. Under general anesthesia, the principle of circumvallation previously described is employed to stop blood and lymph drainage, after which the whole diseased area is thoroughly wiped out.

In carcinoma of the bladder, two methods are available. If the growth is large, a suprapubic cystostomy may be performed, the growth first being coagulated away and the base then thoroughly treated. In women, however, an open-air Kelly cystoscope of hard rub-

Fig. 11.—Papillary carcinoma of bladder after coagulation.

ber, for the sake of insulation, gives ample exposure for efficient coagulation of quite large growths, and does away with the discomforts and risk of the more extensive operation. At one, two or three sittings, a papillomatous tumor from 2 to 3 cm. in diameter may be wiped out. This is accomplished with little discomfort to the patient, if the aforementioned hypodermic of morphin, scopolamin and atropin is administered

an hour previous to the treatment. In bladder tumors, the best results thus far have been with the combination of radium and electrodesiccation or electrocoagulation.

My experience with desiccation and coagulation in the treatment of rectal and cervical carcinoma is small, but I am convinced of the efficacy of this method in dealing with such diseases either alone, in early malignancies and benign papillomas, or in conjunction with radium and the roentgen ray in the more advanced. Hemorrhoids are treated by coagulation of the contained blood without incision. As the blood clot is later absorbed, the hemorrhoid disappears. In chronic endocervicitis, electrocoagulation serves to wipe out the infected and diseased areas, allowing the cervix to return to a normal condition.

As indicated in the foregoing discussion, electrocoagulation and electrodesiccation offer great possibilities of usefulness to the radiologist. Often heavy irradiation of cancers of the oral cavity, face, skin, vulva and urethral orifice causes painful, slowly healing, sclerotic ulcerations. A technic is developed whereby this undesirable situation is avoided. The local application or implantation of radium is carried out as usual. At the time when the reaction is expected to set in (a week or ten days) or, better, a little before this time, a thorough coagulation or desiccation of the growth is done, giving it a wide margin. After such a treatment sloughing occurs, but rapidly healthy granulations appear in a week or ten days, and prompt healing results.

Fig. 12.—Benign mole excised with endotherm knife: *a*, zone of molecular degeneration; *b*, zone of coagulation inside *a*; *a* and *b* measure together 0.1 mm.

In radium or roentgen-ray burns of longer standing, which may or may not contain new growth, electrocoagulation or desiccation is of therapeutic importance. A thorough treatment by one of these methods will eradicate the hyalinized avascular tissue and any remaining disease, and at the same time permit the development of healthy granulations following irrigation with surgical solution of chlorinated soda. Plastic surgery can now be done, if needed.

An elderly man from Texas had a basal cell epithelioma involving the right ear, right external auditory canal and a large part of the scalp over the mastoid process. There had been several previous radium treatments without the disappearance of the disease, as evidenced by microscopic examination of the tissue removed. He was then given heavy external radiation by the pack method far above the erythema dose. This would ordinarily have caused a severe, painful ulcer. To prevent such an undesirable consequence, all the affected area, even down into the middle ear, was removed with coagulation under scopolamin-morphin narcosis ten days after the radium treatment. Irrigation with hypochlorite solution cleaned the wound nicely and promoted active granulation. Before skin grafting could be done, the patient went home; but sections taken prior to his departure showed no cancer. That was five months ago. A letter received recently states that there has been continued healing of the wound up to an area about an inch in diameter. Undoubtedly there would have been much earlier healing had skin grafts been applied. There has been no evidence of return of the growth to date.

CONCLUSIONS

1. The newer electrothermic machines are much more powerful than those formerly used and give currents of greater range of intensity and quality, and at the same time are susceptible of more accurate control.

2. Electrothermic methods as herein described are effectual in removing benign and malignant accessible tumors in a large percentage of the cases.

3. Electrodesiccation and electrocoagulation complete a quadrangle of therapeutic agents to be used in the treatment of accessible malignancy. Surgery, roentgen ray and radium are all essential, but fall short far too often. Desiccation or coagulation in combination with one of these methods adds the much needed facilities in the successful treatment of cancer.

4. As technic is perfected and experience is enlarged, the percentage of cures and good palliative results will be greatly increased by combining these methods.

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THE MENACE OF POORLY FITTED SPECTACLES IN OLD PERSONS*

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Although it has been known for many years that chronic irritation plays a part in the localization of malignancy, little attention has been called to the mechanical injury caused by spectacles. Herz,[1] indeed, did report a basal cell cancer of the nose apparently due to the constant rubbing of glasses, and raised the question as to the frequency of such a finding. Three other writers have incidentally mentioned spectacles as the probable agent responsible for some of the cancers in their series of cases. Thus, Sweitzer[2] thought that this accounted for the etiology in one of his patients; Hazen[3] referred to six, and Sutton[4] to five other patients who had trauma from this cause as the evident stimulus. No additional reports have been encountered, although perhaps some have been overlooked.

It seems to me that there must be many more such cases not recorded, as four have been seen during a short time and in a small series. A brief summary of these cases will be reported here.

* From the Section of Surgery, Yale University School of Medicine and the Surgical Clinic of the New Haven Hospital.

1. Herz, L. F.: M. Rec. **91**: 370 (March 3) 1917.
2. Sweitzer, S. E.: Skin Cancer, J. A. M. A. **69**: 370 (July 21) 1917.
3. Hazen, H. H.: Roentgen-Ray Treatment of Cutaneous Cancer, J. A. M. A. **76**: 1222 (April 30) 1921.
4. Sutton, R. L.: Clinical Study of Carcinoma of the Nose, J. A. M. A. **77**: 1561 (Nov. 12) 1921.

REPORT OF CASES

CASE 1.—M. J., a man, aged 64, seen, July 31, 1923, for two years had had a raised, hard growth on the right temple. This growth started where the bow of his glasses caused an area of irritation. The lesion had gradually enlarged, but

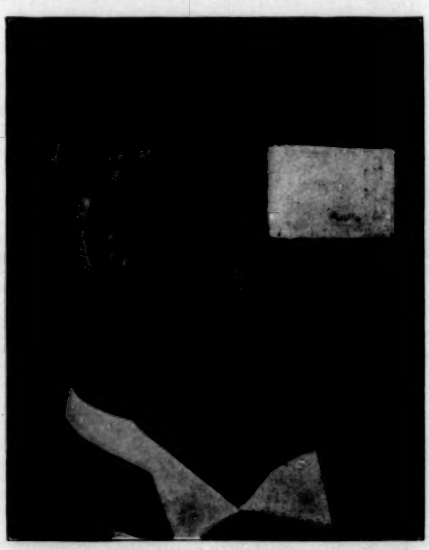

Fig. 1.—Cutaneous horn in Case 1.

had not caused any trouble otherwise. Examination showed a raised, cornified area, 1 cm. in diameter and elevated above the surrounding skin for a similar distance. There was no infiltration of the base nor enlargement of the neighboring glands. The diagnosis of cutaneous horn seemed warranted (Fig. 1). The papule was cut down with a sterile knife till the papillae at the base were exposed. Radium was then applied. The spectacle frames were altered. Two radium treatments were necessary to cause disappearance of the lesion.

CASE 2.—F. C., a man, aged 49, seen, Feb. 6, 1922, had had psoriasis on the arms, knees and chest for years; there was also a scaly, dry irritative lesion of the scalp (seborrhea). Twelve years before, he had noticed a small abraded area where the bow of his glasses rubbed. This area gradually increased in size. It itched a great deal and caused him to pick at it, after which it bled freely. He treated it with salves and tincture of iodin. There was an area over the right temple about the size of a silver dollar. The center was covered with smooth skin, but all about the periphery was a hard, raised, whitish-blue rim of tissue partly covered with heaped up skin; it was not attached to the underlying tissues, and there were no signs of inflammation or palpable glands in the neighborhood (Fig. 2). The Wassermann reaction was negative. A specimen removed for microscopic examination was reported as basal cell cancer. Radium was applied, February 6 and later, until the whole periphery had been covered. The bow of the glasses was altered so that no rubbing occurred in the temporal region. Complete healing had occurred in July, 1924.

CASE 3.—B. G., a woman, aged 67, seen, Oct. 6, 1921, had had a growth on the left temple for more than twenty years. It started as a small red area where her glasses rubbed, and slowly spread. Five or six years before I saw her, a small wart came back of the right ear. It was covered with scabs and scales, and gradually increased in size. Two and a half years previous to examination, a small wart with a black scaly top appeared on the left side of the chin. These scales were easily brushed off in washing the face, and a bleeding ulcer was left. This ulcer began to enlarge. In the left temporal region anterior to the left ear there was a round, crater-like, nodular lesion measuring 2 cm. in diameter. It was in the form of a slightly raised ring, and was rather hard. The skin in the center was red, and in one area was ulcerated and infected. Just below and behind the right ear was a second, almost similar growth. The third was situated over the mandible on the left side, and consisted of a hard, raised, infected ulcer somewhat larger than the other two lesions. There were many evidences of senile change in the skin, keratoses, seborrheic warts and atrophy. The Wassermann reaction was negative. A specimen excised for microscopic examination showed typical basal cell cancer. Several radium applications were made. The lesions had healed in July, 1924.

CASE 4.—J. S., a man, aged 77, seen, Nov. 10, 1922, came to the New Haven Dispensary because of weakness and cough. Examination showed pulmonary tuberculosis. For several years he had had a growth behind the left ear. He wore glasses, the bows of which curved in back of the ear directly to the growth. There was an ulceration 3 cm. long by 1 cm. wide behind the left ear. The base of this ulcer was slightly moist and was brownish red. The ulcer looked very inactive. The skin was elevated from 0.3 to 0.4 cm. all about the edges, in a smooth, irregular, firm ridge. A

Fig. 2.—Basal cell cancer in Case 2.

portion of this edge extended on the pinna. A specimen, removed for microscopic examination, showed blue staining cells in whorls, with an almost alveolar arrangement in places. The picture might be that of a sweat gland tumor, although this could not be proved except by serial sections which demonstrated such an origin. The glasses were altered. Several radium treatments were given, with complete healing.

CONCLUSIONS

It is apparent even from this brief review that poorly fitting spectacles can be a real menace to their wearers. This is especially applicable in those beyond middle age, and the danger is considerably increased when senile changes have taken place in the skin of the irritated area. One should be mindful of this possibility and should take every precaution with the proper adjustment of eyeglasses.

The places where constant abrasions are to be avoided are the bridge of the nose, the sides of the bridge near the inner canthi, the temples and at the back of the ears. In the four cases here reported, the temples were affected in three instances, and the fourth lesion occurred behind the ear; but in Sutton's cases and also in Herz's case, the nose was involved. Owing to the tendency for basal cell cancer to occur most commonly on the nose, it is probable that most growths arising in irritation from spectacles will occupy this position. It would seem *a priori* that spectacles of the pince nez type would be especially liable to cause trouble, but no data are available to support this assumption.

In view of the possibility of malignancy occurring in an irritated area, one should take the responsibility of impressing on patients the necessity of promptly attending to any maladjustment of their spectacles.

GENERALIZED GIANT LYMPH FOLLICLE HYPERPLASIA OF LYMPH NODES AND SPLEEN

A HITHERTO UNDESCRIBED TYPE*

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The clinical picture of a general adenopathy associated with enlargement of the spleen is encountered in a variety of disease conditions. The chronic diseases in adult life in which this association of symptoms is dominant are the leukemias, the infectious granulomas (under which are included Hodgkin's disease, syphilis and tuberculosis) and lymphosarcomatosis. However, in the last ten years we have accumulated three instances of a general adenopathy with splenomegaly which do not represent any of the groups just mentioned, and furnish examples of a condition which we believe has escaped recognition or at least, if seen, has not been reported or recorded as a disease entity. We base this statement on the fact that a diligent and conscientious search of the literature has failed to reveal more than one instance identical with, or even similar to, the group that is presented here. This case was reported by Becker[1] in 1901. A lymph node was removed during life, three years after onset of the disease, and considered as hyperplastic by the pathologist. The adenopathy and splenomegaly subsided somewhat after arsenic medication. We have assumed the responsibility of naming this condition splenomegalia lymphatica hyperplastica.

Localized hyperplasia of lymph nodes of long standing (so-called lymphomas) has been reported by LeCount,[2] Ewing[3] and others. A similar lymphoid hyperplasia involving only the spleen (splenic lymphadenosis) was noted by Josselin de Jong[4]; splenectomy proved successful in this condition. Hitzrot also removed a similar spleen.[5]

The first case was brought to our attention by the examination of a lymph node and spleen removed by Dr. Howard Lilienthal in 1914. The patient, a woman, died following the splenectomy, and no necropsy could be obtained. The clinical notes speak of a general adenopathy with a very large spleen and a negative blood picture. The surgeon removed the spleen on account of the physical discomfort that it caused the patient. On examination, the enormous spleen showed a giant hyperplasia of the malpighian bodies, such as will later be described in detail. This striking pathologic picture was recalled by one of us when two other patients appeared last year at about the same time in the service

Lymph node in Case 1 under low power (× 60), showing the gigantic enlargement of the lymph follicles.

of the First Medical Division of Mount Sinai Hospital. These two patients were women, aged 28 and 32, respectively. Each had noticed swellings on both sides of the neck and gradually increasing size of the abdomen accompanied by marked discomfort and at times pain on the left side. A splenectomy was done in one instance on account of progressive anemia and evidence of marked blood destruction. Later we learned that better results can be accomplished with radiotherapy.

REPORT OF CASES

CASE 1.—S. B., a woman, aged 28, single, was admitted to the First Medical Division, Feb. 15, 1923, complaining of swellings in the neck of two and one-half months' duration. Her family history was negative. Two years before, a physician noticed enlarged lymph nodes when he incised "boils" in both axillae. About two and one-half months before admission, the patient had noticed swellings on both sides of the neck; these were never painful or red. About the same

* From the First Medical Division and the Pathological Department of Mount Sinai Hospital.

1. Becker, E.: Deutsch. med. Wchnschr. **27**: 726, 1917.
2. LeCount, E. R.: J. Exper. Med. **4**: 559, 1899.
3. Ewing, J.: Neoplastic Diseases, Philadelphia, 1919, p. 336.
4. Josselin de Jong, R.: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **69**: 185, 1921.
5. Hitzrot, cited by Pool, E. H., and Stillman, R. G.: Surgery of the Spleen, New York, 1923.

time she had some difficulty in breathing. She was told that she was anemic, and was given a tonic. The dyspnea subsided in about two weeks. Lately she had noticed that the abdomen was gradually increasing in size, especially in the upper part, where there was marked discomfort.

The patient was fairly well developed and well nourished; the tonsils were cryptic and buried; there was a marked enlargement of all the lymph nodes, especially in the posterior triangles. The nodes varied in size from a pea to a walnut and were discrete, freely movable and not tender. The preauricular nodes were also enlarged. The chest was of symmetrical expansion. There was a slight bulging of the upper part of the sternum at the level of the second left interspace. The lungs were clear and resonant throughout. The heart was apparently normal. The entire left side of the abdomen was protuberant; there was no tenderness or rigidity. The spleen was felt to be of huge size, and filled the left part of the abdomen from the level of the eighth rib to the anterior superior iliac spine and to the right 5 cm. beyond the midline. It filled the umbilical space and part of the epigastrium. It was smooth, nontender and ballotable, and moved with respiration. The liver was not felt and did not appear to be enlarged to percussion. In addition to the cervical nodes the axillary, epitrochlear and inguinal lymph nodes were also greatly enlarged.

Blood examination on admission showed: hemoglobin, 72 per cent.; red cells, 4,768,000; white cells, 6,000; platelets, 160,000; polymorphonuclear neutrophils, 71.0 per cent.; polymorphonuclear eosinophils, 3.5 per cent.; lymphocytes, 15.5 per cent.; monocytes, 10.0 per cent.

The blood Wassermann reaction was negative.

Chemical examination of the blood showed urea nitrogen, 14 mg.; nonprotein nitrogen, 35 mg.; uric acid, 4.6 mg.; cholesterin, 0.160 per cent.

Microscopic examination, by Dr. F. S. Mandlebaum, of lymph nodes excised from the neck and both axillae did not show any evidence of Hodgkin's disease, lymphosarcoma or tuberculosis. All the specimens showed the characteristic giant lymphoid hyperplasia to be described later.

The urine was negative on repeated examinations.

The roentgen-ray examination of the chest by Dr. Harry Wessler, February 17, showed a moderate enlargement of the bronchial lymph nodes, especially at the root of the left lung.

The temperature, pulse and respirations were normal.

The patient was discharged from the hospital, March 8, with a diagnosis of splenomegaly and generalized lymphadenopathy of unknown origin, and was kept under observation in the outpatient department. There the patient received sodium cacodylate, 1 grain (0.065 gm.), three times a day, subcutaneously, but without effect. She felt apparently well for ten days, and then began to cough and to complain of dull pains in the left part of the chest, especially on coughing and deep breathing. Shortness of breath developed later. Examination of the chest revealed evidences of a left pleural effusion. The patient was readmitted to the hospital, March 24. March 25, the left side of the chest was aspirated and 20 c.c. of clear amber colored fluid was removed. Examination of the fluid showed: cell content, 3,000 per cubic millimeter; polymorphonuclear neutrophils, 1 per cent.; polymorphonuclear eosinophils, 0.5 per cent.; lymphocytes, 95.5 per cent.; endothelial cells, 3 per cent.; culture, no growth; smear, no bacteria.

The lymph nodes and spleen were gradually increasing in size, although the cough and dyspnea subsided with the rest in bed. April 12, it was decided to use radiotherapy to the spleen and enlarged lymph nodes. After the very first treatment to the spleen, the condition began to improve. Further treatment every week produced some reduction in size of the spleen and lymph nodes. On her discharge from the hospital, April 28, the signs in the left side of the chest had cleared up and the patient felt well enough to go home.

The roentgen-ray treatments were resumed in the outpatient department, being given every week at first and later at longer intervals. The spleen gradually shrank until in December it could not be felt. The lymph nodes also could not be felt after a few roentgen-ray treatments. Occasionally, new lymph nodes appeared in the neck, axilla, or groin; here again radiotherapy proved successful in dissipating them.

At present (September, 1924) the patient is apparently well and has resumed her regular work. Radiotherapy has not been used for the last four months.

CASE 2.—E. S., a woman, aged 32, was admitted to the First Medical Division, March 26, 1923, complaining of general weakness for one year and gradual enlargement of the abdomen for two months. Her family and past history were negative. Since an attack of grip, one year previous, the patient had not felt well. She became tired very easily and felt weak. Ten months before she had had some itching and pain on the left side of the lower part of the chest. For the last two months she had noticed a gradual enlargement of the abdomen, and a feeling of heaviness. She had much discomfort on the left side of the abdomen on bending.

The patient was well developed and well nourished. The lungs were resonant and clear except at the bases, where there was dulness but no abnormal breath sounds. The abdomen was protuberant. The liver was greatly enlarged, smooth and not tender, and extended from the fourth right interspace to 12 cm. below the costal margin in the mammary line. The spleen was also greatly enlarged, smooth and not tender, and extended from the left eighth interspace above to the brim of the pelvis below and to within 2 cm. of the midline anteriorly. The cervical, axillary, epitrochlear and inguinal lymph nodes were moderately enlarged.

Blood examination revealed the findings given in the accompanying table.

Results of Blood Examination

	March 30, 1923	May 5, 1923
Hemoglobin	95 per cent.	75 per cent.
Red cells	4,904,000	3,200,000
White cells	11,000	6,600
Platelets	105,000	.....
Polymorphonuclear neutrophils	42.3 per cent.	48 per cent.
Polymorphonuclear eosinophils	1.0 per cent.	2 per cent.
Polymorphonuclear basophils	0.3 per cent.	1 per cent.
Lymphocytes	49.3 per cent.	46 per cent.
Monocytes	7.0 per cent.	3 per cent.

The bleeding time was slightly prolonged to five minutes. The clotting time of the blood was normal; the tourniquet test and the clot retraction were normal.

The fragility of the red cells was normal.

The phenoltetrachlorphthalein liver function test showed no impairment of liver function.

The blood Wassermann reaction was negative.

Examination of the blood showed urea and nonprotein nitrogen normal; uric acid, 4; cholesterin, 0.142 per cent.

Bilirubin in the blood was normal (1:400,000).

Urobilin excretion in the urine was 135 mg.; stool from 6 to 8 gms. Later the urobilin diminished and became normal in the urine but always remained very high in the stools before splenectomy. (The normal figure for the stool is about 500 mg.)

The pathologic report of the lymph nodes corresponded to the lesion described later.

Because of the increasing weakness, progressive anemia and evidence of marked blood destruction due to the enlargement of the spleen (associated with increased urobilin excretion in the stools), it was decided to do a splenectomy to improve the condition of the patient. The splenectomy was done, May 12, by Dr. A. A. Berg.

The operation was followed by a stormy course. A pneumonia of the left lower lobe developed immediately after the operation. This was followed by a subphrenic abscess, June 5, requiring an incision and drainage. The temperature did not subside with this procedure. Typhoid fever was suspected, June 13, by the appearange of a roseola, and the suspicion was verified when a positive blood culture of *Bacillus typhosus* was obtained. The patient made an uneventful recovery after two relapses and left the hospital, August 23, in excellent condition. The patient returned for observation in the outpatient department. The lymphadenopathy disappeared about three months after the splenectomy. During December, the lymph nodes in both axillae again became enlarged, a few reaching the size of a walnut. Roentgen-ray

treatment to the right axilla caused them to disappear in that area, and the lymph nodes in the left axilla are now only barely palpable. The patient has gained considerably in weight and feels well. The blood examination at present is normal except for a high platelet count.

GENERAL CONSIDERATIONS

Etiology.—The cause of the hyperplasia of the lymphoid tissue in these cases is still unknown. Whether it is due to toxic elements arising from within or without the body or to nutritional disturbances cannot be determined. Kuszczinski[6] has been able to produce generalized lymphoid hyperplasia in mice by feeding special diets.

Symptoms.—The increase in the size of the lymph nodes and spleen results in the following symptoms:

1. Appearance of swellings in neck and other regions of the body. This is due to a generalized lymphadenopathy. The lymph nodes vary in size from a pea to a walnut and are discrete and not tender.

2. Dyspnea.

3. Cough. (The dyspnea and cough are due to pressure from lymph nodes in the mediastinum on the roots of the lungs.)

4. Increase in size of the abdomen due to the enlargement of the spleen. This organ extended to the pelvic brim in our patients. In one case this was associated with marked blood destruction. Occasionally pain is felt in the left hypochondrium.

Pathology.—The first patient of this series died following splenectomy; unfortunately, no necropsy was obtainable. Our third patient also had a splenectomy performed, and in the removal an intra-abdominal lymph node was included. Our pathologic study was therefore confined to two spleens and two intra-abdominal lymph nodes and to cervical and axillary lymph nodes from the two living patients.

The gross and microscopic appearances of the lymph nodes and spleens in the cases studied by us were so similar as to make individual detailed descriptions unnecessary.

Apparently, all lymph nodes throughout the body are enlarged, their size varying from that of a pea to an occasional one that may have the dimensions of a plum. The average one is about the size of a cherry. Each node is perfectly discrete and freely movable in the surrounding tissues.

When a node is excised and examined grossly, as was done in all our cases, the capsule always appears to be intact and uninvolved by disease. The consistency of the node is firm and elastic. On section, the tissue is pinkish gray and moist, and it tends to swell out above the level of the cut surface. Examined more minutely with a hand lens, the individual follicles are seen to be responsible for this projection above the cut surface, for they are enormously enlarged. Most of them are macroscopically visible, and some are as large as a pinhead. Because of their great hypertrophy, they have come to lie in close contact with one another, and the consequent crowding results in compression of the periphery and actual faceting of adjacent surfaces of contiguous follicles. The entire node therefore consists of a tightly packed mass of enlarged lymphoid follicles.

Microscopically, the picture is equally striking and cannot easily be confused with ordinary follicular hypertrophy or with the picture seen in lymphatism. Individual follicles may occupy several microscopic fields even when viewed with the low power objective and a No. 3 ocular. They are seen to lie in such close contact with one another that little or no intervening pulp is visible in most parts of the node, and the lymph sinuses are for the most part obliterated by compression.

Viewed under higher magnification, at least 96 per cent. of each follicle is seen to consist of an endothelioid type of cell. These cells are irregularly polygonal, larger than a lymphocyte, and with much more cytoplasm. Their nuclei are pale staining, although they possess a sharply staining outline and contain granules or a fine network of chromatin. The cells look like lymphoblasts and appear to be identical with those seen in the germinal centers of lymphoid follicles, especially in young children.

Adult lymphocytes with their smaller cell body and pyknotic nuclei are relatively few, and are almost exclusively confined to the edges of the follicles. They form a conspicuous narrow band of more deeply staining cells, which outlines the periphery of each follicle. In fact, the lymphocytes of the node appear to be crowded out by the enormously enlarged germinal centers.

The spleen is enormously enlarged so that it occupies a large part of the right side of the abdomen; one (Case 2) weighed 1,800 gm. and measured 7 by 17 by 28 cm. The capsule of the organ is smooth and thin.

The cut surface of the spleen presents a striking appearance, unlike that in any other form of splenomegaly. One is immediately impressed with the dimensions of the malpighian bodies. Some measure 3 mm. in diameter and are roughly the size of a barley grain. Others are smaller. These gray nodules stud the cut surface of the organ so thickly that in some places they are seen to lie in close contact with one another so as to give the appearance of being confluent. The intervening pulp appears grossly unchanged except for some congestion.

The gross appearance of the spleen is quite unlike that seen in leukemia of either the lymphatic or the myeloid type; nor can the appearance be confused with miliary tuberculosis, for these giant malpighian bodies are much larger than miliary tubercles.

The microscopic picture resembles that seen in the lymph nodes, except that the average malpighian body is three or four times as large as the large lymphoid follicles of the nodes. Almost the entire malpighian body is likewise made up of lymphoid and endothelioid cells—cells with considerable cytoplasm and containing pale staining nuclei rich in chromatin. As in the lymph nodes, these enormous germinal centers are surrounded by a narrow zone of lymphocytes.

The intervening pulp appears to be markedly congested. The sinusoids are dilated. But the pulp is less cellular than normal, most of the lymphocytes being confined to the periphery of the malpighian bodies. In one spleen, the reticular tissue was distinctly increased; in the other, it was unchanged.

Hypertrophy of the malpighian bodies can be observed in patients with lymphatism and as an incidental finding in children suffering from a variety of diseases, chiefly of infectious nature. Even in adults, it is not uncommon in the absence of lymphatism to find enlargement of the malpighian bodies of the spleen after prolonged chronic infections of a low grade type, as, for example, in persons dying after a prolonged bacteria-free stage of subacute bacterial endocarditis. But such hypertrophy of the lymphoid structures of the spleen never even begins to approach the degree observed in our cases of splenomegaly.

6. Kuszczinski, cited in personal communication from Prof. L. Aschoff.

Treatment.—Radiotherapy is the only method that produces complete disappearance of the lymph nodes and causes a reduction in the size of the spleen to normal. Arsenic is ineffectual. According to our limited experience, once reduced by adequate roentgen-ray treatment, the spleen and lymph nodes do not enlarge again.

CONCLUSIONS

1. The hitherto unrecognized disease entity of splenomegaly and generalized lymphadenopathy to which attention is called here is characterized by a giant lymph follicle hyperplasia of the lymph nodes, and by a similar pathologic process of the malpighian bodies in the spleen, resulting in an enormous splenomegaly.

2. The blood picture is normal, and the condition is apparently benign.

3. Roentgenotherapy effects a complete disappearance of palpable lymph nodes and reduces the spleen to normal size, and restores the patient to health; we cannot say as yet that it cures the disease.

48 West Seventy-Sixth Street.

ALKALOSIS, NOT DUE TO ADMINISTRATION OF ALKALI, ASSOCIATED WITH UREMIA

REPORT OF CASE *

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AND
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A patient who presented certain unusual features was recently observed. An abstract of the case follows:

REPORT OF CASE

History.—L. F., a negro woman, married, a housewife, was admitted to the medical service of the Johns Hopkins Hospital, Oct. 7, 1924, complaining of weakness and "pains all over." For sixteen months, she had noticed progressive weakness and dizziness on exertion. For six months, there had been occasional vomiting after meals. For the past two months, the vomiting had been very frequent, after each meal and often after taking water only. During this period, there had been severe cramps in the lower abdomen and also occasional precordial distress and palpitation. In the past month, she had suffered from painful hemorrhoids with fecal incontinence at times, and had also been troubled with frequent burning micturition. For two weeks, she had been confined to bed and had become increasingly drowsy.

Physical Examination.—The temperature was 98.2 F., the pulse, 80, and the respirations, 20. The patient was very much emaciated. Disorientation alternated with lucid intervals. The respirations were of normal rate and depth; there was no orthopnea. Extreme pallor of the mucous membranes was observed. The retinal arteries were markedly sclerosed, there being variations in caliber with prominence of the white lines and nicking of the veins. In both eyes, there were numerous old and recent flame shaped hemorrhages and small patches of exudate. The radial arteries were extremely hard and tortuous. The heart was only slightly enlarged, the apex beat being 13.5 cm. from the midsternum in the fifth interspace. The aortic second sound was very much accentuated. The blood pressure was 220 systolic, and 116 diastolic. The abdomen was tense, and there was tenderness in both lower quadrants. The liver extended 5 cm. below the costal margin in the midline. There were large hemorrhoids. The rectum was very tender on digital examination. On admission, the urine was acid, with a specific gravity of 1.008, a moderate amount of albumin, a trace of diacetic acid, numerous white cells and a few hyaline casts. Subsequent urinary determinations are valueless because of contamination with feces. On admission, the hemoglobin was 28 per cent. (Sahli); the red blood corpuscles, 1,480,000; the white blood corpuscles, 23,000, with 92 per cent. of polymorphonuclear neutrophils.

Subsequent Clinical Course.—On the day after admission, the patient began to have diarrhea. The stools were very foul and gave a strongly positive guaiac test for blood. The phenolsulphonephthalein excretion was 5 per cent. in one hour. October 12, 75 c.c. of bright red blood was passed by rectum. A few hours later, she vomited 300 c.c. of dark, typically "coffee ground" material, which was composed chiefly of old blood. On the following day she vomited repeatedly, but the vomitus contained no gross blood. Free hydrochloric acid was absent from the vomitus. October 13, Cheyne-Stokes respirations were observed and continued until her death. Respirations of the typical "air hunger" variety were not observed. She was irrational and disoriented. She groaned continually. She became weaker. The skin was dry and scaly. The tongue was heavily coated and the breath very foul. October 17, grinding of the teeth was observed. There were clonic contractions of the arms. Chvostek's and Trousseau's signs of tetany were absent. Proctoscopic examination revealed a rough, granular, red mucosa, covered with dirty gray exudate and many small bleeding ulcers. She was given 1,000 c.c. of 3 per cent. saline solution by subpectoral infusion. The following day she was moribund. Despite large doses of caffein, Cheyne-Stokes respirations continued, and periods of apnea as long as fifty-five seconds were noted. October 19, death occurred from respiratory failure. The final clinical diagnosis was cardiovascular renal disease, with advanced chronic nephritis and uremia, myocardial hypertrophy without insufficiency, diphtheric colitis, cystitis and alkalosis. It was thought that she probably also had carcinoma of the stomach, with pyloric obstruction.

Chemical Findings.—The results of all the blood analyses are given in the table. The nonprotein nitrogen rose from 162, October 8, to 229 on the 15th, 263 on the 17th and 312 on the 18th. There were corresponding increases in the uric acid and creatinin. The figure for the whole blood chlorids, 0.486 per cent., October 17, is rather low, and the rise on the following day can be attributed to the saline infusion. The striking chemical features are the high level of the p_H (7.6) indicating an alkalosis, and the unusually high carbon dioxid combining power (65, 67.6 and 69) for a uremic patient.

Necropsy.—The anatomic diagnosis was: chronic nephritis; cardiac hypertrophy; chronic passive congestion of the liver; hyperplasia of the bone-marrow; diphtheric proctitis; ulcers in colon, ileum and stomach; fibrinous pericarditis; cystitis; lobular pneumonia and edema of the lungs; a stone in the pelvis of the left kidney; hydronephrosis and atrophy of the left kidney; soft concretions in the gallbladder and common duct; adhesions of the left tube and ovary, and a calcified tracheal gland.

The important findings, made by Dr. F. B. Kindell, who performed the necropsy, are as follows: The heart was distinctly hypertrophied but firmly contracted. Most of the enlargement was confined to the wall of the left ventricle. There was a fresh fibrinous pericarditis.

The duodenum and upper part of the ileum showed no abnormalities. In the last meter of the ileum, there were areas of reddening of the mucosa. There were ulcerations following the line of the ridges in the mucosa. The tops of the folds showed a grayish line of diphtheric membrane. There were a few ulcers in the mucosa of the ascending colon. In the sigmoid, about 10 cm. from the anal orifice, there was an extensive ulcerated area involving practically the whole circumference of the rectum. In places, the necrotic mucosa had become detached and hung in loose folds.

The stomach was a little dilated. In the lesser curvature of the stomach, about 6 cm. from the cardiac orifice, was a peculiar oval erosion of the mucosa. This measured about 3 cm. in greatest length and 2 cm. in greatest width. This was a clean looking excoriation, with a sharply demarcated margin.

* From the Medical Clinic, Johns Hopkins University Medical Department.

The left kidney weighed 40 gm. and was a small mass about the usual shape, firm in consistency, with a thickened capsule. The surface of the kidney was grayish brown and finely granular, with no large scars. On section, the amount of kidney tissue was found to be very slight; most of the kidney tissue was made of collapsed dilated pelvis and calices. There was an irregular hard concretion, which just fitted the pelvis, projecting into the ureteropelvic junction.

The right kidney weighed 110 gm. The capsule stripped with difficulty, leaving a rough, granular surface. The tissue was rather red, and minute blood vessels were visible. On section, there was found to be considerable atrophy of the kidney substance; the cortex was thin, and the cortical striae were indistinct.

COMMENT

There are several points of particular interest in this case:

1. The association of alkalosis with uremia. As has been emphasized by Chace and Myers,[1] acidosis is an almost constant finding in the uremic state. Cullen[2] found a p_H of 6.95 in a patient dying of chronic nephritis. When sodium bicarbonate is administered to combat the acidosis, alkalosis sometimes results. Such instances have been reported by Howland and Marriott,[3] Harrop,[4] Ellis[5] and Morse.[6] These authors emphasize the fact that poor renal function may lead to an alkali intoxication, when relatively small amounts of alkali are given. Alkalosis not due to the administration of alkali has not been previously reported in uremia.

The cause of the high p_H in this case is not entirely clear. Clinically, aside from alkali therapy, alkalosis is most commonly seen in pyloric or high intestinal obstruction, as was first shown by McCann[7] and has recently been repeatedly observed by Haden and Orr,[8] and overbreathing from various causes, such as hysterical hyperpnea (Grant and Goldman[9]), cardiac failure (Fraser, Ross and Dreyer[10]) and fever (Koehler[11]). Our patient received no alkali. There was no hyperpnea, other than the Cheyne-Stokes type of respiration commonly seen in the uremic state. The patient was afebrile. At necropsy, no intestinal obstruction was found.

However, she did vomit repeatedly, both before coming to the hospital and while under observation. The vomiting offers the best explanation for the alkalosis. It has been generally believed that the alkalosis occurring with intestinal obstruction was dependent on the chlorid depletion caused by vomiting. Haden and Orr[12] have shown that in experimental intestinal obstruction the fall in plasma chlorids occurs before vomiting begins, and that the alkalosis is not due to loss of chlorid by vomiting. Without trying to go further into the cause of the chemical changes, it is of interest to point out that this patient, who had functional but not anatomic obstruction, presented the typical chemical changes (high nitrogen, low chlorids and alkalosis) of a true obstructive lesion. The absence of free hydrochloric acid (as in one of Ellis' cases[5]) speaks against the alkalosis as being due simply to vomiting with washing out of acid. It is more probable that the mechanism was similar to that discussed by Haden and Orr: that chlorid is rapidly utilized by the body to neutralize some toxic substance, and this rapid withdrawal of chlorid from the blood leaves an excess of alkali. This ordinarily would be rapidly compensated by excretion of the excess, but in the presence of damaged kidneys compensation cannot take place. The question as to why other patients with uremia and repeated vomiting do not have alkalosis remains unanswered.

2. The normal level of the plasma bicarbonate with a p_H of *7.6*. In the cases with elevated p_H reported by Ellis,[5] the bicarbonate was also high. Van Slyke[13] first pointed out that the plasma bicarbonate is not an infallible guide as to the p_H. In one of Koehler's[11] cases, the carbon dioxid was 47 and the p_H *7.6*. Kast, Myers and Schmitz[14] report two cases with elevated p_H and normal carbon dioxid content. These authors state that "such findings indicate that data on both the p_H and the bicarbonate are necessary in order to secure an adequate index of the acid base balance." In a more recent publication, Myers and Booher[15] report several such cases, and conclude that whereas in the acidosis due to compensated alkali deficit—the usual condition in diabetic acidosis—the plasma bicarbonate is a fairly accurate index of the p_H in other disturbances of acid base equilibrium, the determination of the plasma bicarbonate alone may give misleading information as to the p_H.

Results of Blood Analyses

Date	CO_2 Combining Power of Plasma, per Cent. by Volume	Non-protein Nitrogen, Mg. per 100 C.c.	Creatinin, Mg. per 100 C.c.	Uric Acid, Mg. per 100 C.c.	Whole Blood Chlorids, Mg. per 100 C.c.	p_H	Hemoglobin (Buhli) per Cent.
October 8.....	67.6	168	9.0	12.5	...	...	28
October 14.....	...	...	...	...	...	...	19
October 15.....	65	229	8.4	14.1	...	...	..
October 17.....	69	288	9.9	15.2	468	7.6	..
October 18.....	60.7	312	10.2	16.3	581	...	..

3. The presence of an acid urine with alkalosis. This has often been found by other observers, particularly in renal insufficiency.

4. The presence of diacetic acid in the urine. As has been pointed out by Ellis[5] and by Kast, Myers and Schmitz,[14] this finding is not uncommon in patients with alkalosis; and acetonuria, per se, should not be considered a sign of acidosis and an indication for alkali therapy.

5. The profuse bleeding from the rectum and stomach. These hemorrhages are larger than those usually found in uremia, and, taken with the palpable liver, extreme emaciation and profound anemia, were very suggestive of malignant disease with metastasis to the liver. At necropsy, the hemorrhages were found to have been due to multiple ulcers in the alimentary tract, and the "enlarged" liver was a ptotic liver.

SUMMARY

Although, in a fatal case of uremia, with profuse bleeding from the gastro-intestinal tract, the patient

1. Chace, A. F., and Myers, V. C.: Acidosis in Nephritis, J. A. M. A. **74**:641 (March 6) 1920.
2. Cullen (unpublished data), quoted by Van Slyke, D. D.: J. Biol. Chem. **48**:153 (Sept.) 1921.
3. Howland, John; and Marriott, W. M.: Quart. J. Med. **11**:308 (July) 1918.
4. Harrop, G. A., Jr.: Bull. Johns Hopkins Hosp. **30**:62 (March) 1919.
5. Ellis, A. W. M.: Quart. J. Med. **17**:405 (July) 1924.
6. Morse, J. L.: New York M. J. **113**:965 (Dec. 18) 1920.
7. McCann, W. S.: J. Biol. Chem. **38**:553 (Sept.) 1918.
8. Haden, R. L., and Orr, T. G.: J. Exper. Med. **37**:365 (March) 1923.
9. Grant, S. B., and Goldman, A.: Am. J. Physiol. **58**:209 (June) 1920.
10. Fraser, F. R.; Ross, J. P., and Dreyer, N. B.; Quart. J. Med. **15**:195 (April) 1922.
11. Koehler, A. E.: Acid-Base Equilibrium: Clinical Studies in Alkalosis, Arch. Int. Med. **31**:590 (April) 1923.
12. Haden, R. L., and Orr, T. G.: J. Exper. Med. **38**:55 (July) 1923.
13. Van Slyke, D. D.: J. Biol. Chem. **48**:153 (Sept.) 1921.
14. Kast, Ludwig; Myers, V. C., and Schmitz, H. W.: Clinical Conditions in Alkalosis, J. A. M. A. **83**:1858 (June 7) 1924.
15. Myers, V. C., and Booher, L. E.: J. Biol. Chem. **59**:699 (April) 1924.

had not received alkali, there was clinical evidence of alkalosis. This was confirmed by the chemical findings, the p_H of the plasma being 7.6. Such a condition has not been previously noted in uremia, as in all the cases with alkalosis heretofore reported, alkali had been administered. The best explanation for the alkalosis is that it was in some way dependent on the vomiting.

IMPROVEMENT IN ANESTHETIC TECHNIC FOR DENTAL SURGERY

MORRIS ECKER, D.D.S.
NEW YORK

In a previous article I [1] briefly outlined the evolution of anesthesia for dental purposes, gave the technic for synergistic anesthesia as developed in the course of extensive clinical experience and laboratory investigation, and made a comparison of 55,000 straight nitrous oxid-oxygen anesthesias with 5,000 synergistic anesthesias.

In an experience with 14,300 anesthesias in which synergistic methods were employed, cyanosis, jactitation, holding straps, and all elements of uncertainty were definitely eliminated, and the physical and nervous strain to which the operator employing the older methods was subjected was entirely obviated. Larger amounts of oxygen could be used, and the margin of safety was greatly increased.

Despite these satisfactory results and the apparent perfection of our anesthetic technic, the introduction of ethylene, in 1923, with the favorable reports of the laboratory and clinical findings, warranted us in trying out a number of cases with this agent for purposes of comparison with the other methods mentioned. Therefore, in association with Gwathmey, animal work with ethylene, nitrous oxid and oxygen was started, Sept. 28, 1923, and continued until Nov. 5, 1923. Clinical work was commenced, Oct. 9, 1923, and this method has been in constant use ever since.

Animal experiments proved that ethylene is superior to nitrous oxid as an anesthetic. In our clinical work, with patients varying in age from 3 to 79 years, we have found that with ethylene the patient is relaxed and in surgical anesthesia when all the signs—active lid reflex, rolling eyes and color—would indicate only the first stratum of the third stage of anesthesia. The patient is thus separated from the danger zone by the second and third strata. In order to obtain the same degree of relaxation with nitrous oxid, the patient would be cyanosed and bordering on asphyxia, with eyeballs fixed, and in the third stratum of the third stage, with only a theoretical line marking the danger zone, yet with analgesia less complete than with ethylene in the corresponding phase and stage.

Ethylene lowers blood pressure and slows the heart, while nitrous oxid quickens the pulse and raises blood pressure. Theoretically, in order to maintain the physiologic balance, the two gases should be used together or alternately, as indicated. In our experience, however, the best results are obtained by using the two gases in sequence and combination. Respiration, pulse, color and blood pressure are more nearly normal when they are combined than when either of them is used alone, thus seemingly proving the theory. The fact that the gases are only in physical solution in the blood, with no chemical changes taking place, adds to the feeling of security.

TECHNIC

The mask is placed over the face of the patient, who respires nitrous oxid (nine parts) and oxygen (one part) six or eight times; at the end of this period the patient is unconscious or nearly so. Ethylene is then very gradually turned on until four parts are given; the oxygen is increased and the nitrous oxid is decreased to two parts each.

When this ratio is reached, i. e., ethylene, four parts; nitrous oxid and oxygen, each two parts; the patient is in light surgical anesthesia, which may be deepened if indicated by holding the mask in position for a short while longer. With the nasal inhaler, the proportions usually remain as stated.

Nitrous oxid, having no odor, should be given until the functions of the olfactory nerve are abolished, which takes from twenty to thirty seconds, and the patient is then in a state of unconsciousness. When the ethylene is turned on, it is unnoticed by the patient. The oxygen is then slightly increased and the nitrous oxid decreased. From this point on the three gases are combined and the flow is continuous. Light surgical anesthesia takes place within from one and a half to two minutes.

The proportion of the gases used is approximately two parts each of nitrous oxid and oxygen with four parts of ethylene. No valve manipulation is necessary. With this mixture, we have carried a patient for forty-five minutes, with no attempt at varying the gases.

By comparison, if nitrous oxid and oxygen were used alone the anesthesia would be not so smooth, and the patient would be near the danger zone.

Comparing nitrous oxid, oxygen and ethylene combined, with nitrous oxid and oxygen passed over paraldehyd and urethan, as in our earlier technic,[1] the brain block seems to be more complete and the analgesia more profound with the former. Paraldehyd and urethan, therefore, have been eliminated as unnecessary. Nausea and vomiting occur more frequently with the triple combination than with nitrous oxid and oxygen alone, but the patient is safer.

Ethylene and oxygen were used in 565 cases; latterly the combination of nitrous oxid-ethylene and oxygen has been used in 4,100 cases, making a total of more than 4,665 [2] anesthesias with ethylene. Since the beginning of this clinical experience, a distinct advance has been made by the manufacturers in the output of ethylene. At first it was necessary to discard some cylinders on account of nausea and vomiting following the use of gas. The product now, however, seems to be less pungent and of a more even quality.

From the experience thus briefly given, we are convinced that a distinct advance has been made, with respect to efficiency and safety, over the earlier methods of applying the principles of synergism to anesthetic technic for dental surgery, and that the old method of Wells and Colton, formerly universally used by dentists with the patients in the third stratum of the third stage, asphyxiated, cyanosed, in the danger zone of anesthesia, may be relegated to the past. The addition of ethylene to nitrous oxid and oxygen gives a safer anesthesia; this is a sufficient reason for its use.

147 Fourth Avenue.

1. Ecker, Morris: Synergistic Anesthesia for Dental Surgery, Am. J. Surg. 35:54 (April) 1921.

2. Figures corrected to Sept. 5, 1924.

Clinical Notes, Suggestions, and New Instruments

DIABETIC CATARACTS IN AN INFANT*

RALPH H. MAJOR, M.D., AND EDWARD J. CURRAN, M.D., KANSAS CITY, KAN.

The occurrence of diabetic cataracts in children is extremely rare. While this complication is seen very often in older diabetic patients, Strouse and Gradle[1] found only two cases in children reported in the literature, to which number they added a third. One patient described by Sherrill[2] was a boy, aged 15, and Joslin's[3] patient was a girl of 12 years. The patient described by Strouse and Gradle was a girl, aged 10. Sherrill's patient died two years after operation, while Joslin's patient died in coma three years and four months after the onset of the diabetes. The patient of Strouse and Gradle was under good control at the time of their report. We have had under observation for the past year a child, who, when first seen, was 11 months old, and was suffering from bilateral cataracts and diabetes.

REPORT OF CASE

L. S., a boy, aged 11 months, was admitted to the Medical Service of the Bell Memorial Hospital, Aug. 10, 1923, because of the presence of sugar in the urine. This condition was discovered, July 5, 1923, one month before admission, and an attempt was made to place the child on a diabetic diet.

The family and personal history were negative. Both parents were healthy; they showed negative Wassermann reactions and normal blood sugars, the father's blood sugar being 91 and the mother's 83 mg. per hundred cubic centimeters.

Six months before admission, the mother noticed that the child became restless, and that his eyes began to get dark and were changed in appearance.

The physical examination showed marked emaciation. The skin was somewhat yellowish. He was very fretful and cried constantly. Both eyes showed a marked lateral nystagmus, and the lenses of both were almost opaque and milky white in appearance throughout, excepting that there were two small areas in the left lens which were a little clearer than the rest of the lens. These ultimately became opaque.

The blood examination showed red blood corpuscles, 4,600,000; white blood corpuscles, 12,800, and hemoglobin, 70 per cent. (Sahli). The urine showed a very heavy trace of a reducing substance, which was proved to be glucose. The blood sugar on admission was 161 mg. per hundred cubic centimeters, and the carbon dioxid tension was 34.7 per cent. by volume. The blood sugar showed variations between 94 and 222 mg. per hundred cubic centimeters while under observation.

This patient was placed on a diet of whole cow's milk, 5 per cent. vegetable purées and cod liver oil, and was given from 6 to 10 units of insulin a day.

A discission of each cataract was done, and the nucleus lifted into the anterior chamber to facilitate absorption. This was done, November 19. The cortex of the lens was found to be soft, almost fluid, and they began to absorb rapidly in the following weeks. The patient was discharged from the hospital, November 27.

The cataracts had the appearance of those found in young diabetic patients and were certainly not congenital in origin, for as time went on they became denser. There are many types of congenital cataracts that may not be noticed by the parents for months after birth; but these cataracts were so apparent, being visible through the smallest pupil by any one who looked at the eyes, that it is hardly possible they could have passed unobserved for a period of six months had they been present earlier. In some of the older books on ophthalmology, it is said that a congenital cataract may progress and even become soft when complete. We know now that this is not true of a congenital cataract when uncomplicated by some local disease of the eye. We know also that such a cataract may follow tetanic convulsions in infancy. These are not true congenital cataracts. There was no history of convulsions in this case, and the eyes were perfectly healthy excepting for the cataract, which was actively progressive. Nystagmus is a symptom of a progressive cataract in a child. If it appears in a congenital cataract, it is due to maldevelopment of the macula or other causes that cannot be remedied by removal of the cataract. This condition disappeared after the removal of the cataracts. The retina and choroid and the rest of the eye were found to be normal and healthy. For the foregoing reasons we feel sure that this was a case of diabetic cataracts.

The patient was readmitted to the hospital, Jan. 18, 1924, and at that time showed complete clearing up of one of the cataracts and almost complete disappearance of the other. The vision was apparently normal; the nystagmus had disappeared. Three blood sugar determinations showed 67, 127 and 80 mg. per hundred cubic centimeters. The boy at this time was taken off insulin. Another blood sugar examination, May 15, showed the blood sugar to be 209 mg. per hundred cubic centimeters, and the insulin was again commenced in 3 unit doses a day. Recent letters from the patient's mother state that he is getting along very well with slight restrictions of diet and small doses of insulin, from 2 to 3 units a day.

This is apparently the youngest diabetic patient on record suffering from cataracts. Other very striking features of his illness were the rapid increase and equally rapid lowering of tolerance from time to time.

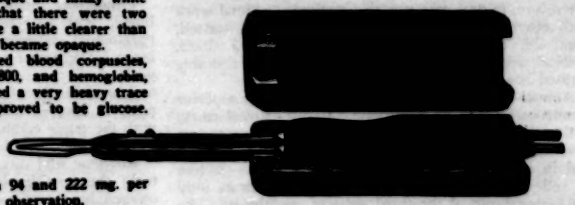
* From the Departments of Internal Medicine and of Ophthalmology, University of Kansas School of Medicine.

1. Strouse, Solomon; and Gradle, Harry: Diabetic Cataract in a Child, J. A. M. A. 82:546 (Feb. 16) 1924.
2. Sherrill, J. W.: Clinical Observations Concerning Progressiveness of Diabetes, J. Metabol. Res. 2:667 (May) 1922.
3. Joslin, E. P.: Treatment of Diabetes Mellitus, Ed. 3, 1923, p. 602.

CAUTERY HANDLE

DAVID O'SHEA, M.D., CHICAGO

The antithermo cautery handle, here illustrated, is aimed to protect the surgeon's hands while doing major cauterization. It is well adapted for the purpose for which it was intended.



Cautery handle.

The handle is bulky. It gives the operator a good hand hold. It is made of cork (which is a nonconductor of heat), in which is embedded the handle part of the cautery. It may be easily sterilized, if necessary, without injury.

Edgewater Beach Hotel.

A SPLINT FOR ABDUCTION, TRACTION AND SUSPENSION IN FRACTURE OF THE HUMERUS*

PAUL N. JEPSON, M.D., ROCHESTER, MINN.

It is generally conceded that better results are obtained in fracture of the humerus by adequate traction in bed. The splint shown here is for the purpose of obtaining extension, suspension, outward rotation and traction in cases of fracture of the humerus. It is so made that it can be applied quickly. A long horizontal board (*a*) is placed transversely between the mattress and the springs. A Buck's extension is applied to the arm; the rope from this extension is run

* From the Section on Orthopedic Surgery, Mayo Clinic.

through a pulley (*b*), and a weight is applied. Another Buck's extension is applied to the forearm in a plane perpendicular to that of the arm, and in such a manner as to allow the patient to grasp a handhold (*c*), which permits him to move the fingers frequently and at will, and tends to prevent stiffness. A rope running from the handhold (*c*) over the pulley (*d*) is fastened at *e*. A block (*f*) is adjustable for a space of 20 cm., allowing for forearm flexion adjustment.

Splint for use in fracture of the humerus.

The points of advantage are: (1) The splint may be quickly applied; (2) it is efficient and light, and (3) it can be made by any carpenter.

THE USE OF EPINEPHRIN IN OCULAR HYPERTENSION

HARRY S. GRADLE, M.D., CHICAGO

Since Hamburger reopened the question of the local use of epinephrin for the purpose of reducing increased intra-ocular tension, the literature has been replete with many a pro and con on that subject. All investigators have injected the solution subconjunctivally, and only recently has mention been made by Thiel of the use of an epinephrin ointment. For the last few months, I have been using epinephrin for the relief of increased intra-ocular tension by topical application, with results that are just as effective as when the solution is injected underneath the conjunctiva. A small pledget of cotton is moistened with the same amount of epinephrin that would be used for subconjunctival injection (from 4 minims to 0.5 c.c.), and with fine forceps is introduced well under the upper eyelid. The eye may or may not be anesthetized previously with a drop of butyn or phenacain, depending on the ocular condition and on the sensitiveness of the patient. The skin of the lid should be grasped between the thumb and forefinger, and the lid lifted away from the eyeball. When the cotton pledget is in position, the lid should be allowed to resume its normal position gently so as not to compress the cotton more than is necessary. The pledget remains in position two and a half minutes, and is then removed with forceps.

The conjunctiva begins to blanch within one minute. In a normal eye, the pupil starts to dilate irregularly upward in from two and a half to four minutes, and assumes a maximum mydriasis in from seven to ten minutes. The systemic effects of the epinephrin become apparent in about six minutes after the procedure has been started, and disappear in about fifteen minutes. The lowering of the intra-ocular tension of the normal eye can be detected in about twelve minutes, and of the pathologically high tension in a somewhat greater time. In about fifteen minutes, a partial paralysis of accommodation begins to appear, and attains its maximum in from twenty-five to forty minutes, lasting from two and a half to three hours in all. The accommodation seems to be cut about in half. The mydriasis remains at the maximum for about thirty minutes, after which the pupil begins to contract, attaining the normal size and mobility in approximately one and a half hours.

The modus operandi of the decrease of ocular tension by epinephrin is as yet not perfectly understood; but, in all probability, it depends on the contraction of the vessels of the vast choroidal reservoir, thus actually decreasing the total content of the eyeball, as well as a freeing of the anterior chamber angle by a contraction of the vessels of the iris and an actual thinning in the anteroposterior diameter of the iris. Both these effects are due to a stimulation of the sympathetics by the epinephrin. To attain this maximum stimulation, the epinephrin, when injected, should be placed half way between the limbus and the transitional fold. But the introduction of the epinephrin on a pledget of cotton allows absorption from the region of the transitional fold, thus stimulating the posterior sympathetics, as well as absorption from the conjunctival surface, over which the excess epinephrin that is squeezed out of the pledget trickles.

An added feature of this method of application is that the simple introduction of a pledget of cotton into the region of the upper transitional fold is a much less fearsome procedure to the patient than the more formidable subconjunctival injection. Furthermore, it is much easier for the physician.

22 East Washington Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

CINCHOPHEN (See New and Nonofficial Remedies, 1924, p. 93).

Cinchophen-B. P. C.—A brand of cinchophen-N. N. R.

Manufactured by the Benzol Products Co., Newark, N. J. No U. S. patent or trademark.

HOYT'S SPECIAL GLUTEN FLOUR (See New and Nonofficial Remedies, 1924, p. 195).

The following dosage form has been accepted:

Hoyt's Protein Cereal: Hoyt's special gluten flour cooked and made into flakes.

No U. S. patent or trademark.

MERCURETTES-P. D. & CO.—Tabellae Hydrargyri Cum Oleo Theobromatis.—Briquettes, each containing finely divided metallic mercury 3.25 Gm. (50 grains) incorporated with theobroma (cacao butter) and perfumed. Each briquette weighs 8 Gm. (120 grains).

Actions and Uses.—The same as those of ointment of mercury U. S. P. It is claimed that in the treatment of syphilis and certain forms of parasitic skin diseases where ointment of mercury has been employed, the use of mercurettes permits a more accurate dosage and is more convenient and less disagreeable.

Dosage.—Applied by inunction. If less than one briquette is to be used, it may be divided by cutting with a knife.

Prepared by Parke, Davis & Co., Detroit. No U. S. patent. U. S. trademark 180,215.

IODO-CASEIN (See New and Nonofficial Remedies, 1924, p. 156).

The following dosage form has been accepted:

Tablets Iodo-Casein with Chocolate: Each tablet contains iodo-casein equivalent to 0.01 Gm. iodine.

Dosage: For goiter prophylaxis, one tablet per week throughout the school year.

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SATURDAY, FEBRUARY 28, 1925

THE CHICAGO DRAINAGE CANAL AND THE WATER SUPPLY OF THE GREAT LAKES DISTRICT

The controversy over the Chicago drainage canal has become so overlaid with prejudice and so befogged in a cloud of contending issues, engineering, financial, legal, sanitary and political, that the average person who has not made a study of the subject may well consider the situation hopelessly and inexcusably muddled. There are a few general considerations, however, that should be kept in mind, and that permit at least a tentative judgment on the merits of the case.

The board of twenty-eight eminent engineers to which the whole matter has recently been referred makes the formal pronouncement that Lake Michigan is the only practicable source of water supply for Chicago and the adjacent territory. With this opinion there will be general agreement. Again, there can hardly be dissent from the view of the board that the abandonment of the main drainage canal and the discharge of the city's sewage into Lake Michigan would be "a serious backward step in sanitation."

Granting these contentions, what is the objection to the continued operation of the drainage canal? Mainly this: that the diversion of water from the Great Lakes for the purpose of diluting the sewage is working an injury to the navigation and water-power interests of other communities in this country and in Canada.

The circumstance on which this conflict of interests is based is primarily the lowering of the level of the Great Lakes—that is, Lakes Michigan, Huron and Erie—by the operation of the Chicago canal. While the extent to which lowering attributable to the Chicago canal has taken place is not altogether certain, it seems to be admitted by high engineering authority that it amounts at present to about five inches. The withdrawal of this amount of water has undoubtedly been some hindrance to navigation in the channel in the St. Clair flats above Detroit, and the loss of revenue from this cause has been estimated at about $600,000 a year. The remedy suggested for this situation is the construction of two regulating dams, one at Buffalo and one in the St. Lawrence; such dams could be readily built in such a manner as to compensate for the Chicago diversion and something more; the cost, part of which should properly be borne by the Chicago Sanitary District, would not be prohibitive, and would be only a small portion of what Chicago has already expended and is preparing to expend on its sewage disposal program. This procedure would seem to meet the demands of navigation interests.

So far as interference with water power development at Niagara is concerned, it should be remembered that the amount of dilution water asked for by Chicago, 10,000 cubic feet a second, is only 5 per cent. of the ordinary flow at Niagara. As pointed out by the board of engineers, there is no economic loss to the country at large in using lake water for power in Illinois instead of at Niagara.

The legal situation is more serious. The Supreme Court of the United States has ruled that Chicago has no right and has never had any right to a diversion of more than 4,167 second-feet of water. The right to divert even this amount is vested in the Secretary of War, and, as is well known, the War Department has long refused to issue a permit for a flow of 10,000 second-feet. The reason given for the restriction of flow to 4,167 second-feet is the avoidance of currents that might interfere with navigation in the Chicago River. From this aspect of the case it is clear that whatever the necessities of Chicago, the legal right to control diversion of lake water rests in federal authority. No doubt a large part of the irritation felt toward Chicago in other communities and by thoughtful people through the country generally is due to the attitude of the trustees of the sanitary district, who for many years have proceeded to take what water they wanted without much reference to the rights of others. When a leading engineering journal declares that the Supreme Court decision "makes one thing perfectly clear—that the representatives of Chicago who for a quarter century persisted in defying the plain law of the land as asserted by federal authority have involved the city in a mess the way out of which is by no means clear today,"[1] the responsible citizens of Chicago might give more attention to the policy of the board of trustees of the sanitary district, a body elected by popular vote. It certainly has not simplified a difficult and complicated situation to have the board "constantly proceed in defiance of courts and federal orders."

In another direction Chicago cannot be accused of lack of foresight or good judgment. Long ago it became evident that even the illegal draft of 10,000 second-feet would be inadequate for proper dilution, and experimental sewage treatment stations were

1. Engineering News Record, Jan. 15, 1925.

established under eminently able supervision. These have now been expanded into a series of treatment works of large-scale practicability. Within two or three years the sewage of more than 1,000,000 people will be undergoing treatment by modern biologic methods. As stated in the report of the board of engineers, "No other city in the United States is treating the sewage of so large a population." While the ultimate expense of the projected program—estimated at $125,000,000—is colossal, there seems no other solution for Chicago. There is, indeed, no question that eventually many other American cities will have to adopt similar methods.

An unfortunate obstacle to the successful operation of sewage treatment works in Chicago has been and still is the excessive water waste. This has been known to the water-works engineers and to many other responsible citizens for years, but the demonstrated remedy—metering the supply—is successfully opposed by interested agencies. About one half of the water pumped in Chicago, 275 gallons daily per capita, is wasted utterly; this means the waste of at least 75,000 tons of coal a year, to say nothing of the liquid chlorin used for chlorination and other items of expense. One of the worst features of Chicago's water waste is the great burden placed on the city in the construction and operation of sewage-treatment works for dealing with twice the amount of putrescible liquid that should be necessary.

So far as immediate health issues are concerned, it would hardly seem a civilized procedure, whatever the shortcomings of Chicago's elected representatives, to restrict at once the removable volume of lake water to 4,167 second-feet, although admittedly the right to impose such restriction exists. The limitation would not only cause extensive deposition of sewage solids in the drainage canal and produce intolerably offensive conditions in the Chicago River and downstream in the Desplaines-Illinois River, but would certainly endanger the health of the city by pollution of the lake water through more or less frequent reversals of flow in the Chicago River. Typhoid can hardly be confined within the limits of a single city. Chicago might conceivably become a distributing center of typhoid to the whole Middle West. As shown by the considerations here discussed, there can be little objection to allowing diversion of 10,000 second-feet of water if suitable provision is made for the regulation of lake levels. Chicago can hardly ask for this, however, unless she curtails as speedily as possible the preposterous waste in her water supply, and also proceeds expeditiously to carry out the comprehensive and generally satisfactory program of sewage treatment already planned. Here is one of those situations in which the interests of one community, while apparently paramount, must be subservient to the general good. Chicago may, with good grace, recognize the rights of her neighbors, especially since the accommodation of local conditions to these rights will bring about improved sanitation and better health for the people of the city.

TEMPERATURE AND METABOLISM

The metabolic adjustment of man to a lowered external temperature is fairly well known. Some physiologists believe in the so-called chemical regulation of body warmth whereby there is an increased production of heat in the presence of external cold. Others maintain that in the human subject the increase in metabolism at low environmental temperatures is due entirely to muscular activity that involves conscious or unconscious shivering. Experience shows, for example, that a cold bath is likely to induce shivering unless some muscular effort, such as the movements of swimming, is indulged in so as to supply caloric energy in another way. Of course, in everyday life, when possible, man adapts himself to cold temperatures by warming his abode or increasing his clothing so that there is not so much difference between the air bathing his skin in summer and that which jackets it in winter.

What happens to the metabolism at abnormally high external temperatures has been somewhat debated. Du Bois[1] has pointed out that in such environments the regulation of the body temperature by evaporation, radiation and conduction may become insufficient, particularly in humid air, and there may be hyperthermia of the body cells and a consequent rise in metabolism. Something of this sort has been demonstrated in recent tests at the U. S. Bureau of Mines in a study of basal metabolism before and after exposure to high temperatures and various humidities.[2] The investigators there have stressed the importance of estimating what they call the "effective temperature" of the environment, whereby account is taken of certain modifying atmospheric conditions. Effective temperature is defined as an index of the intensity of heat felt by the human body as a result of external temperature, humidity and air movement. In other words, it takes care of physical factors of the air. According to the Bureau of Mines researches, there is a range of successful operation of the body thermostatic control, which adjusts the heat production well within reasonable limits, according to the temperature of the environment. Above an effective temperature of 85 F., however, there is apparently a strain on the mechanism. The body makes strenuous efforts to resist rise in its temperature by promoting evaporation of perspiration from its surface; but the limit of action of the thermostatic control is reached, and the latter fails above an effective temperature of

1. Du Bois, E. F.: Basal Metabolism in Health and Disease, Lea & Febiger, Philadelphia, 1924.
2. McConnell, W. J., and Yaglou, C. P.: Basal Metabolism Before and After Exposure to High Temperatures and Various Humidities, Pub. Health Rep. 39: 3075 (Dec. 5) 1924.

90 degrees. This is indicated by the rapid increase of heat production at the higher temperatures. At an effective temperature of 105, the heat production is twice as great as at the normal temperature of 65. A tendency for an increase in heat production is also shown below an effective temperature of 65, which is necessary to keep the body warm in cold weather.

Under conditions that prevent the usual loss of surplus body heat through such physical mechanisms as radiation and conduction, "physiologic fever" may arise. With the rise of body temperature, the metabolism accelerates. Basal heat production is minimum at a body temperature of about 98.4 F., and it increases both above and below this temperature. The increase for the higher temperatures is attributed to the warming up of the cells, and the marked rapid increase for temperatures above 100 is apparently due to the breaking down of the human thermostatic control. It is then that the conditions induced resemble the pathologic processes familiar in the hyperthermia of infective fevers. Whenever the body cells are overwarmed, whether by external temperature conditions or through genesis of heat by toxic processes, the metabolism is increased. The augmented losses must be made good by food; hence the old dictum about "starving a fever" is in need of radical revision.

AMEBIC MIGRATIONS

There was a time, not long distant, when the descriptions of rare diseases or physiologic anomalies were looked on essentially as catalogues of medical curiosities. It was often from this point of view that they were studied; and the interest in the novelties was not primarily hygienic. Modern experience has shown, however, that with the rapidly increasing facilities for speedy transportation of man and animals from one end of the earth to the other, disease may be spread with formerly unimagined readiness. The maladies of the tropics presently become familiar among inhabitants of the temperate zones. In a seaport city like New York having intercourse with all parts of the world, such disorders gain access to this country from regions in which the disease is endemic. As Fordyce and Wise [1] have recently indicated, even diseases such as leprosy may become widely distributed before a correct diagnosis is made. Presently that which was once a rarity becomes a much more familiar sight in certain medical circles.

This is true not only of ailments referable to infectious agencies, but also of pathologic manifestations that have a purely structural or functional explanation. In such instances it may be the refinement of technic in diagnosis, or the publication of more careful observations, that first directs attention to disorders that prove to be far more widespread than expected, as soon as they are more successfully recognized. Sometimes it requires the spur of scientific publicity to awaken the medical profession to the real extent of certain diseases. Illustrations are afforded by the rapidly growing appreciation of the significance of adolescent goiter, the unexpectedly large incidence of pellagra, the widespread distribution of intestinal parasites, the unusual prevalence of rickets, and the occurrence of heart block where only a few years ago such conditions were given scant attention.

Pasteur once remarked that in the field of observation opportunity comes only to the prepared mind. Such a consideration may warrant extended attention to unique disease because of the consequent possibility that it may thereupon be recognized more readily. An instance seems to be afforded by a recent description of the extremely rare skin affection known as amebiasis cutis. To most students, amebiasis in man implies intestinal infestation with entozoic amebas. Since the World War, the fact of importance has developed that infections with parasitic amebas can no longer be considered tropical but are world wide in their distribution. Recent writers [2] have summed up the geographic distribution of all the entozoic amebas of man by saying that they all occur, in different percentages in each species, wherever man occurs. They further contend that all the recent work on the amebas of man points to the conclusion, which is of paramount interest from the medical standpoint, that all the amebas occurring in man are harmless commensals with the exception of *Endameba histolytica*. The same work indicates just as surely that *Endameba histolytica* lives, and can live, only at the expense of the tissues of its host. In spite of the fact, however, that it is a tissue parasite and sometimes produces amebic dysentery and abscesses of the liver, by far the majority of infected persons never show any clinical symptoms of disease, but simply live along as healthy carriers of the organism.

The latest report [3] of amebic infection of the skin indicates clearly that the parasites may invade parts of the body where they have not ordinarily been suspected to occur. Amebic abscesses may rupture in various locations, among which external ones are seemingly among the rarest. The discharge usually comes through a sinus leading back into the cavity of an amebic liver abscess, and there is likely to be a simultaneous history of chronic dysentery. In Heimburger's case,[3] the pathogenic amebas were actually identified in the pus discharging through the skin. Of striking significance is the demonstration that treatment with emetin, so effective in certain types of intestinal amebiasis, was highly beneficial, the drug

1. Fordyce, J. A., and Wise, Fred: Leprosy in New York City, Arch. Dermat. & Syph. 11:1 (Jan.) 1925.

2. Hegner, R. W., and Taliaferro, W. H.: Human Protozoology, New York, the Macmillan Company, 1924, p. 47.

3. Heimburger, L. F.: Amebiasis Cutis, Arch. Dermat. & Syph. 11:49 (Jan.) 1925. The references to the earlier literature are there cited.

acting almost like a specific for the disease. The facts now on record suggest that great care should be taken to prevent amebic infection of the skin after operative treatment of amebic abscess of the liver. It is perhaps of more than passing interest to recall the demonstrated invasion of the structures of the mouth by the common human entozoon *Endameba gingivalis*, and the debated claims of Kofoid and his co-workers [4] regarding the abnormal occurrence of amebas in other parts of the body. Warthin [5] has found amebas in tissue lesions of the testis. New chapters on the migrations of these protozoans are about to be opened.

Current Comment

A MEDICAL "BOOK OF MERIT"

A belief that the medical profession had not received adequate recognition for distinguished service in the World War as compared with other branches of the army and navy is not sustained in a careful study by Hume,[6] who has catalogued the names of all officers of the Medical Department who received the medal of honor, distinguished service cross, distinguished service medal or navy cross, together with the citation setting forth the service or deed for which the decoration was given. With this list is an interesting history of the decorations conferred by our government on members of the military services, illustrated with pictures of the medals. The United States was the first country in the world to establish a military decoration to be awarded for acts of bravery irrespective of rank. This decoration was instituted by General George Washington in an order dated Aug. 7, 1782, issued from his headquarters at Newburgh on the Hudson. The decoration was known as the Purple Heart, or the Order of Military Merit, and the names of all persons receiving it were to be recorded in the Book of Merit, which was to be kept at headquarters. The order stated that "men who have merited this distinction [are] to be suffered to pass all guards and sentinels which officers are permitted to do. The road to glory in a patriot army and a free country is thus opened to all. This order is also to have retrospect to the earliest stages of the war, and to be considered as a permanent one." But not even the will of our first president could confer permanence in an unmilitary nation, and when, after two generations had passed away, Congress established the certificate of merit, Washington's order of military merit had long been forgotten, and his Book of Merit had disappeared in the dust of oblivion. This little book gives vivid glimpses of the responsibilities and dangers that war brings to military surgeons. One is given a thrill to read paragraphs like this:

> Near Chaudron Farm, France, Oct. 1, 1918, when the sanitary detachment with which he was working was ordered to fall back under intense artillery and machine gun fire, Captain Bates, upon his own volition and contrary to the advice of others, refused to leave the wounded men who had not been evacuated, but remained with them throughout the day, ministering to them under the most violent fire, in utter disregard of his own safety. When night came he secured litter bearers and succeeded in taking all the wounded to safety.

Or this citation for a naval medical officer who received both the navy cross and the distinguished service cross while serving with marines:

> In the Bois de Belleau, France, June 11, 1918, although he had been wounded under the left eye, almost blinded by gas fumes and his dressing station wrecked by shell fire, he [Lieutenant Commander Pratt] remained at his post, working under the most trying conditions until all the wounded had been safely evacuated.

It is interesting to learn that dental surgeons during battle forsook their operating chairs for the first aid stations at the front, where their mechanical skill made them very valuable in the application of splints and dressings, and so dental surgery has acquired a new dignity in military eyes from the list of its members killed and wounded in battle. No member of our profession can turn over the pages of the Medical Book of Merit without being proud of these records of the ability, courage and self-devotion of the medical men in uniform.

DEATH OF SIR CLIFFORD ALLBUTT

Sir Thomas Clifford Allbutt, perhaps the most noted of British physicians, died, February 22, aged 88 years. He held the regius professorship of physic in Cambridge University since 1892, a professorship founded in 1540 and occupied by a distinguished line of physicians, beginning with Ralph Winterton and Francis Glisson, and including many other notables. Sir Clifford Allbutt was born, July 20, 1836. During his long career in medicine, covering more than sixty-four years, he received practically every honor that may come to a British physician. Among his contributions to the progress of medicine were special studies of the arthritic symptoms in locomotor ataxia and of the visceral neuroses, and the invention of the short clinical thermometer. Most of all, Sir Clifford Allbutt was known, however, as a medical writer with a powerful and pleasing literary style, and as a contributor to the literature of medical history. He was the editor of a system of medicine, and his two volume work on diseases of the arteries was generally recognized as a classical contribution to the subject. His historical papers and books include contributions on medieval science, on surgery, on Greek medicine in Rome, and on Byzantine medicine. In his address as president of the British Medical Association in 1920, he called attention particularly to the way in which scientific medicine has developed its usefulness through aid from the general sciences. He urged particularly

4. Kofoid, C. A.; Boyers, L. M., and Swezy, Olive: Occurrence of Endamoeba Dysenteriae in the Lesions of Hodgkin's disease, J. A. M. A. **78**:1604 (May 27) 1922. Kofoid, C. A.; Kornhauser, S. I., and Swezy, Olive: Criterions for Distinguishing the Endamoeba of Amebiasis from Other Organisms, Arch. Int. Med. **24**:35 (July) 1919. Kofoid, C. A., and Swezy, Olive: On the Free, Encysted, and Budding Stages of Councilmania Lafleuri, a Parasitic Ameba of the Human Intestine, Univ. California Pub. Zool. **20**:169, 1921; Amebiasis of the Bones, J. A. M. A. **78**:1602 (May 27) 1922.

5. Warthin, A. S.: The Occurrence of Entamoeba Histolytica with Tissue Lesions in the Testis and Epididymis in Chronic Dysentery, J. Infect. Dis. **30**:159 (June) 1922.

6. Hume, E. E.: A Medical Book of Merit: United States Army and Navy Decorations Awarded to Medical Department Officers for Distinguished Service in the World War, Washington, D. C., 1925.

that specialization be not permitted to dispose entirely of general practice. While recognizing the advantages of group practice, he called attention particularly to dangers that might accompany such a development. At that time, also, he was presented by his British colleagues with his portrait painted by Sir William Orpen. In closing his address, Sir Clifford said:

> Of late years surgery has made our advances conspicuous, but inner medicine is coming again into her own; nay, they are one. From lesser to larger groups the standard of health must be more and more the guide and the signal of the nation, of the country, of the city, of the workshop; for public health is purchasable. If, by his invention of tools, Man has become the destroyer of creation, let Medicine show that tools can also be its saviour. Every righteous physician regards his practice as a social service, a means not only of bodily but also of social reconstruction, and of moral and intellectual health. Thus Medicine will become more and more a binding force in societies, a bond between nations, and a purification of the world.

THE INCOME TAX—TRAVELING EXPENSES—POSTGRADUATE STUDY

The Commissioner of Internal Revenue still holds that the expenses of postgraduate study and traveling expenses incident to attendance at meetings of medical associations are not parts of the professional expenses of a physician. He holds, therefore, that they are not deductible in the computation of a physician's federal income tax. In the computation of their federal income taxes, physicians should not deduct these expenses. They are advised, however, to protest against the payment of so much of the money paid by them as is paid because of the commissioner's rulings. By making such protests at the time of filing returns, claims for refunds in event of a reversal of the commissioner's interpretation of the law will be more easily adjusted. No particular form of protest is required. State on the income tax return or in a memorandum attached to it the amount expended for postgraduate study or for traveling expenses, as the case may be, and that the payment of so much of the tax as is the result of the compliance with the commissioner's ruling which holds that said amounts are not deductible is made under protest.

OSTEOMALACIA—A DEFICIENCY DISEASE

The idea that osteomalacia is due to a metabolic disturbance analogous to that of rickets is not a new one. Several years ago, Funk [1] wrote that late rickets forms the natural stepping stone between rickets in small children and osteomalacia. Because the latter disease was formerly observed with greater frequency in pregnant women, a direct connection between pregnancy and osteomalacia was assumed by some writers. However, the assumption cannot be sustained in the light of the more widespread occurrence of osteomalacia following the beginning of the World War and not confined to any sex or age. This prevalence of the disease in central Europe was coincident with a lack of certain types of foods. Osteomalacia is very prevalent throughout the northern and western parts of China. This has furnished an opportunity to study the blood of persons in regions where the malady is, so to speak, endemic. Miles and Feng [2] of Peking have observed decreases in the calcium and sometimes the phosphorus content of the serum, the variations depending on the severity of the disease and its duration. The blood findings were frequently like those of rickets with tetany. Hyperexcitability of the muscles is almost universal among such patients. Some of them show a negative calcium balance suggesting either a deficiency of the element in the diet or the lack of some factor that serves to make retention more satisfactory. An improvement in the diet, which is usually very poor among those affected, tends to bring relief. Hence Miles and Feng believe that osteomalacia should now be classed as a deficiency disease of the same category as that including rickets or, more generally, the disturbances in metabolism in which lime salts cease to be deposited properly in the bones and cartilage. The deficiency is conceived at present to involve principally the content of fat-soluble vitamins, although there may be a calcium deficiency at the same time.

1. Funk, Casimir: The Vitamines (Translation by Dubin), Baltimore, Williams and Wilkins Company, 1922.

2. Miles, L. M., and Feng, C.-T.: Calcium and Phosphorus Metabolism in Osteomalacia, J. Exper. Med. 41: 137 (Jan. 1) 1925.

3. The Significance of Melanuria, editorial, J. A. M. A. 82: 889 (March 15) 1924.

4. Churchman, J. W.: Melanuria in Mental Disease, Proc. Soc. Exper. Biol. & Med. 22: 135 (Dec.) 1924.

NEW OBSERVATIONS ON MELANURIA

Although the appearance of melanin in the urine has long been associated in the minds of clinicians with the occurrence of melanotic tumors, and melanuria has actually been regarded as diagnostic of melanotic sarcoma, there have been several indications of late that this is not the whole story. Careful study of a number of patients has shown that melanuria may occur without any evidence whatever of the presence of a pigmented tumor. Consequently, the prediction was ventured in THE JOURNAL [3] only a few months ago that, owing to the attention thus directed to the subject, melanuria will be discovered more frequently, and will consequently receive more exhaustive study than in the past. This anticipation has already begun to become a reality. Churchman [4] has lately reported that, as an outcome of urinary examination of 300 patients exhibiting various types of mental disease but otherwise free from maladies that might be expected to produce melanuria, the pigment was found in quantity five times—an observation never previously made for such disorders. The immediate occasion for this finding was the observation of marked melanotic pigmentation in the large intestine in many persons suffering from functional neuroses. According to Churchman, it is sometimes present throughout the entire large bowel, but is usually most marked in the cecum, diminishing toward the sigmoid. The pigment is found, as a rule, confined to the mucosal layer, where it is seen as large polyhedral cells with a yellowish brown stippling. Pigmentation of this type is generally regarded as a sign of intestinal deterioration, and is not infrequently seen in the bowel of those who have suffered from

long continued intestinal stasis and intoxication. Churchman points out that since there are evidences of advanced cellular deterioration in the large bowel of many persons exhibiting mental disease, since this is often characterized by a striking degree of melanotic pigmentation, and since the possibility that this pigment enters the circulation has been established by microscopic investigation, one explanation of the presence of melanuria in the patients examined which must be seriously considered is that the pigment reached the urine from the bowel. If this explanation proves to be correct, melanuria may be found to be an important clinical sign of intestinal deterioration.

Association News

THE ATLANTIC CITY SESSION

Entertainment for the Ladies at Atlantic City

The Local Committee of Arrangements at Atlantic City, through Mrs. Worth Clark, chairman of the Women's Committee of Entertainment, announces that plans are being made to provide entertainment for the wives and daughters of Fellows, so that their visit to Atlantic City during the annual session of the American Medical Association will be made as pleasant as possible. The indications are that many Fellows will be accompanied to Atlantic City by members of their families.

Alumni Reunions

Secretaries of alumni associations, college classes, etc., are requested to send as early as possible to the Secretary of the American Medical Association information concerning banquets, reunions or other meetings that are to be held in Atlantic City during the coming annual session.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Smallpox in Calhoun County.—About sixty cases of smallpox were reported in Calhoun County, January 30, most of them among negroes.

ARKANSAS

Bill to Change Medical Practice Act.—A bill has been introduced into the state legislature by Representative Lewis which provides for a board of medical examiners to be composed of four regular physicians, two eclectics and one homeopath. All applicants for license would be graduates of a "legally incorporated medical college or institution" who made a general average in their studies of at least 75 per cent. and received not less than 50 per cent. in any subject.

CALIFORNIA

Health Officers Appointed.—Dr. Earnest Dozier, Redding, has been appointed health officer of Shasta County, succeeding Dr. Sherman T. White, who has held that position for many years.——Dr. Carl P. Jones, health officer of Nevada County, has been appointed city health officer of Grass Valley to succeed Dr. Paul D. Barnes.——Dr. Alfred L. Phillips has been appointed health officer of Santa Cruz County to succeed Dr. William H. Keck.

State Board Reports.—Gertrude Steele, a beauty doctor licensed in California as a naturopath, and reported to be a fugitive from justice on a charge of manslaughter following the death of one of her "beauty patients," has been located in Oberhausen, Germany, according to the secretary of the board, and has been served with a citation by publication to appear before the board to show cause why her license should not be revoked.——The judgment of the federal court in Sacramento, which sentenced Dr. Stuart N. Coleman to five years in the federal penitentiary following conviction of violation of the Harrison Narcotic Law, has been upheld by the U. S. Circuit Court of Appeals, and Dr. Coleman must serve the sentence imposed. Hearings having already been held before the state board of medical examiners, the final revocation proceedings in Dr. Coleman's case will be effected at the board meeting this month.——"Dr." J. Oscar Francis Haas, who is reported to have been arrested in San Diego, in 1919, under the name of "Rev. J. O. Francis Haas, divine healer," for charging a patient $4,800 for treatments, pleaded guilty in Los Angeles to violation of the medical practice act. ——Jules Marton, Los Angeles, recently pleaded guilty to the unlawful use of the prefix "Dr." and was fined $100.

COLORADO

Society News.—At the annual banquet and meeting, Northeast Colorado Medical Society, Sterling, January 8, Sterling dentists and druggists were guests. Dr. Floyd A. Alcorn, Haxtun, was elected president; Dr. Jirah H. Kellogg, Sterling, vice president, and Dr. Edward P. Hummel, Sterling, secretary-treasurer. The public was invited to an address by Dr. Josiah N. Hall, Denver, on "Medical Frauds and Cults."——The Denver County Medical Society met at the U. S. Army Fitzsimons General Hospital, February 17. Major Earl H. Bruns spoke on "End Results in the Heliotherapy of Pott's Disease," Major Nelson A. Myll on "Heliotherapy in Genito-Urinary Tuberculosis," Major George F. Aycock on "Artificial Pneumothorax Collapse Under Low Intrapleural Pressure," and Major William H. Thearle on "Thoracoplastic Surgery in Pulmonary Tuberculosis." Supper was served in the patients' mess hall following the meeting. The El Paso County Sanatorium Association and the Denver County Sanatorium Association were the guests of the medical society.

DISTRICT OF COLUMBIA

Personal.—Vernon L. Kellogg, Sc.D., of the National Research Council has been elected president of the Washington Academy of Science for 1925.

Chiropractors Refuse Vaccination.—Action has been taken by Dr. William C. Fowler, a district health officer, for the arrest of five persons at the Chiropractic Research University Building, 1349 L Street, on a charge of refusing to be vaccinated following exposure to smallpox. The first floor of the building is occupied by the Chiropractic University, which has been placed under quarantine by Dr. John T. Sprague of the District office. The case which caused the health office to quarantine the Chiropractic University was that of a woman, aged 80, who lived on the record floor of the building. She was taken to the smallpox hospital. The action for the arrest of the five persons followed a personal interview by Dr. Fowler with each of them, at which interview they all refused to be vaccinated. The arrests are based on an Act of Congress which provides:

> That every person in said District having been exposed to the infection of smallpox, shall be at once successfully vaccinated, or vaccinated a sufficient number of times to make it evident that successful vaccination is impossible.

GEORGIA

Violation of Harrison Narcotic Law.—Dr. S. T. DeLoach, formerly of Hagan, was sentenced, February 13, to a year and a day in the federal penitentiary for violation of the Harrison Narcotic Act, it is reported.——Drs. Arthur C. Wade and Louie P. Tessier, both of Augusta, have been bound over to the next term of the U. S. district court under bonds of $1,000 each, on a charge of violating the Harrison Narcotic Law, it is reported.

IDAHO

Osteopathic Bills Postponed.—The bill introduced into the legislature to extend the scope of osteopathy has been indefinitely postponed by a vote of thirty-four to twenty-three. Another osteopathic bill, stating that the definition of osteopathy should be "those things taught in the osteopathic schools at present," was withdrawn, February 7.

ILLINOIS

Rockford Health Report.—The commissioner of health of Rockford reports that 98 per cent. of the milk supply is now pasteurized and bottled mechanically. The infant mortality is 55.79 per thousand living births, and the general mortality rate is 8.92 per thousand population, the lowest recorded in that city.

Physician Indicted.—Dr. Henry L. Green, Quincy, gave bond in the federal court at Springfield, February 9, under an indictment, charging him with violation of the Harrison Narcotic Law. Dr. Green was convicted some time ago, it is reported, on a narcotic charge and sentenced to five years in the federal penitentiary, for which sentence a $5,000 fine was substituted.

State Project Nearing Completion.—In July, 1919, the University of Illinois and the state department of welfare agreed on a plan of cooperation the object of which was to construct a group of hospitals and institutes in the medical center of Chicago, to provide medical treatment for indigent sick, to train medical students, to help practicing physicians keep in touch with developments in the medical world and to instruct the people how to keep physically efficient. The hospitals are not yet in use, but the university has moved into its new laboratory and clinical building and is operating an outpatient department.

Chicago

Y. M. C. A. Dormitory.—While many of the faculty and alumni have voluntarily doubled their subscriptions to the fund to erect a Y. M. C. A. building for medical students on the west side, letters have been sent out by the executive committee of the building campaign requesting a more liberal response for contributions. The option expires soon.

INDIANA

Chiropractors Outwitted.—The chiropractic bill providing that chiropractors must operate under the state board of medical registration and examination, to which would be added one chiropractor, had passed the second reading in the house, February 10. The chiropractic faction was prohibited from adding the original chiropractic bill to the present bill by the speaker of the house sustaining a point of parliamentary procedure.

Court Declines to Act Against Medical Society.—Judge Miller, Indianapolis, declined to grant a temporary injunction on the complaint of Dr. Marion E. Clark and Clarence B. Blakeslee, who operate the Clark-Blakeslee Osteopathic Hospital, to restrain the Indianapolis Medical Society from enforcing a resolution holding it unethical for members of the society to practice in that hospital. Judge Miller sustained a demurrer to the complaint. The plaintiffs must now file a new or an amended complaint, after which a date will be set for a hearing on the issue of a permanent injunction.

IOWA

Personal.—Dr. William T. Shepard, Le Mars, has been appointed health officer of Berkeley, Calif.——Dr. Max E. Witte, Jr., has been appointed head of the staff of the Clarinda State Hospital.——Dr. Charles L. Marston, Mason City, has been reelected president of the medical and surgical staff of Mercy Hospital.——Dr. Walter L. Bierring, Des Moines, has been elected president for a term of six years of the honorary medical fraternity, Alpha Omega Alpha, to succeed Dr. John L. Heffron, Syracuse, N. Y., who was killed last September in an automobile accident.——Dr. William D. McFaul, formerly of Miles, has been assigned as commanding officer to the U. S. Veterans' Bureau Tuberculosis Hospital, Tucson, Ariz.——Dr. Edward F. Strohbehn has been elected president of the staff of Davenport Mercy Hospital, Dr. Charles E. Block, secretary, and Dr. Anthony P. Donohue, treasurer.——Dr. John H. Peck, Des Moines, was elected president of the Iowa Tuberculosis Association, February 6.

KANSAS

New Health Board.—The senate having declined, February 11, to confirm the old board of health, the governor submitted the following new appointees to the board of health for confirmation: Dr. Clarence A. McGuire, Topeka; Dr. Walter A. Carr, Junction City; Dr. Richard Claud Young, Arkansas City; Dr. John H. Henson, Mound Valley; Dr. Addison Kendall, Great Bend; Dr. Clay E. Coburn, Kansas City; Dr. Arthur J. Anderson, Lawrence; Dr. Victor C. Eddy, Colby, and Dr. Walter J. Eilerts, Eldorado.

KENTUCKY

Hospital News.—A $200,000 Shriners' Crippled Children's Hospital is being erected at Louisville.——The Good Samaritan Hospital, Lexington, has been transferred to the Methodist Episcopal Church, South.

Personal.—Dr. Waller O. Bullock has been unanimously reelected president of the board of health of Lexington.——Dr. James E. Rush, professor and head of the department of hygiene and public health, University of Louisville, has been elected to membership in the Royal Institute of Public Health, London. Dr. Rush until recently was field director of the American Society for the Control of Cancer.——Dr. Paul B. Hall, Paintsville, has been appointed health officer of Johnson County.——Dr. Robert M. Hathaway, Farmer City, Ill., has been appointed director of the Daviess County health department to succeed Dr. George W. Duvall, resigned.

LOUISIANA

Narcotics in Shreveport.—Dr. Oscar Dowling, president, state board of health, accompanied by Dr. Knox E. Miller, in charge of U. S. Public Health Service work in Louisiana, O. W. Lewis, federal narcotic agent of Louisiana, Dr. William J. Sandidge, parish health officer, and others, met at Shreveport, February 14, to confer on the traffic in drugs in that city. Dr. Dowling said, it is reported, that the narcotic situation in Shreveport is the worst in the United States, in proportion to its population, and that a small group of physicians there prescribe annually more narcotics than all other doctors in the state, including New Orleans. One physician in Shreveport last year dispensed, without using prescriptions, 93,000 grains of morphin. It was said that not only are narcotics brought to Shreveport for consumption, but there is evidence that they are brought there to be shipped elsewhere. Dr. Dowling and others who believe that the situation can be cleaned up with the cooperation of the courts and local physicians addressed the Shreveport Medical Society on that subject.

MARYLAND

Two Lepers Found in Baltimore.—A case of leprosy, the second within the last few weeks, was reported to the Baltimore city health department, February 20. The patient is a negro from South Carolina, who entered a hospital here three days ago. The other patient, a white woman, has been treated in South Baltimore under the supervision of the Baltimore city health department.

Safety Conference.—Under the joint auspices of the Baltimore Safety Council and the American Society of Safety Engineers, a safety conference was held at Baltimore, January 23, at which, among others, Dr. Loyal A. Shoudy, Bethlehem Steel Corporation, spoke on "The Doctor, the Foreman and the Man"; Leonard Greenburg, Ph.D., U. S. Public Health Service and Yale Medical School, New Haven, on "Industrial Ventilation," and Charles J. Stahl, Westinghouse Electric and Manufacturing Company, South Bend, Ind., on "Industrial Lighting." More than 200 industrial engineers and executives attended the conference.

MASSACHUSETTS

Dinner to Dr. Balch.—The trustees of the Massachusetts General Hospital, Boston, gave a dinner, January 30, to Dr. Franklin G. Balch, on his retirement from the staff of that hospital after more than thirty years' service. The chairman of the board, Mr. Wigglesworth, presided. The speakers were Drs. David L. Edsall, Richard H. Miller and Frederic C. Washburn.

MINNESOTA

Society News.—At the recent annual meeting of the Upper Mississippi Valley Medical Society at Brainerd, Dr. Lloyd Thomas Davis, Wadena, was elected president; Drs. J. Burton Holst, Little Falls, Benjamin I. Derauf, Brainerd, and Oscar V. Johnson, Sebeka, vice presidents, and Drs. George I. Badeaux, Brainerd, secretary-treasurer.

Compensation for Typhoid Carriers.—A bill introduced in the senate, February 6, by Senator Sullivan, provides that typhoid carriers who are prevented from earning a living by

orders of the state board of health or the dairy and food commissioner be eligible for compensation by the state. The bill provides that the industrial commission shall determine the compensation due in each case and appropriate $20,000 to carry out its provisions.

MISSISSIPPI

Personal.—Dr. Robert A. Clanton, county health officer of Grenada, has resigned, and Dr. Thomas J. Brown has been appointed to that position.——Dr. Robert M. Adams, Ripley, has been appointed health officer for Lee County to succeed Dr. James B. Black, Jr., who has been transferred to Jackson to organize a health unit in Hinds County. Dr. Adams has been county health officer in Tippah County for more than eight years.

MISSOURI

Publication of Names on Liquor Prescriptions.—The county circuit court, Jefferson City, granted a restraining order, February 10, against the Jefferson City *Daily Post*, and the county clerk which prohibits publishing the names of persons to whom prescriptions for liquor have been issued. The Daily *Post* had been publishing names of persons who obtained prescriptions in January. Nearly every physician in Jefferson City petitioned for the restraining order stating that the law which permits the publication is unconstitutional in that it infringes on the right of secrecy between physician and patient, and tends to intimidate patients who are really sick from obtaining medicine, and advertises those who are afflicted with disease.

NEW YORK

Buffalo Health Statistics.—The city of Buffalo began to prepare accurate health statistics in 1882, in which year the infant mortality rate was 231 per thousand and the general death rate, 24.06. The infant mortality rate for 1924 was 83.84 and the general death rate, 12.15—both rates the lowest in the history of the city.

Bill to Deduct Cost of Illness.—Senator Fearon, Syracuse, introduced a bill in the senate, February 9, which would permit persons whose net incomes are less than $5,000 to deduct from their income tax returns the sum paid out for medical, surgical and dental services. The same bill was introduced the week before in the house by Assemblyman Phelps, New York.

New York City

Seventh Harvey Lecture.—Dr. Oscar M. Schloss, professor of pediatrics, Cornell University Medical College, will deliver the seventh Harvey lecture at the New York Academy of Medicine, March 21, on "The Intestinal Absorption of Antigenic Protein in Infancy."

Hospital to Start Drive.—Plans to start a drive for $1,250,000 for a building for the Jewish Maternity Hospital, Fifth Avenue and One Hundred and Eighth Street, were announced by the directors of the hospital, February 3. Dr. Nathan Ratnoff, first vice president of the hospital, will head the campaign. It is expected that the new building will be completed by the summer of 1926.

Babies' Hospital Joins Medical Center.—The Babies' Hospital will be a unit of the medical center now under construction at One Hundred and Sixty-Eighth Street and Broadway, according to an announcement by John Sherman Hoyt, president of the board of directors of the hospital. The Babies' Hospital has been associated with the Columbia University Medical School as a teaching institution for twenty-four years. The proposed move will supply the hospital with new buildings which it needs and will give to the medical center the advantage of a children's hospital.

Hospital News.—The hospital buildings at One Hundred and Fiftieth Street and St. Nicholas Place, recently purchased by Dr. Victor Low, have been newly equipped and are being operated as a private hospital of seventy beds with maternity, medical and surgical departments.——The hospital society of Wyckoff Heights Hospital, Brooklyn, has appropriated $20,000 to meet the deficit incurred last year. It was announced that the hospital authorities will start a drive to increase the membership of the society from 1,000 to 2,000, and to raise the remainder of $300,000 needed for a new hospital building. The total amount of the building fund now is $175,000.

Director of Health Demonstration Appointed.—Dr. Leverett D. Bristol was appointed, February 22, administrative officer of the New York City health demonstration which has been undertaken with the aid of the Milbank Memorial Fund in the Bellevue-Yorkville district. Dr. Bristol was the first county health officer in New York, and was formerly state health commissioner of Maine, professor of preventive medicine and public health, University of Minnesota, and recently director of the rural health demonstration in Cattaraugus County, N. Y. He will be associated in this undertaking with Dr. William H. Park, whose appointment as medical officer of the project has been announced.

Society News.—The Medical Service of the Massachusetts General Hospital, Boston, presented the program at the stated meeting of the New York Academy of Medicine, February 19, the speakers being Drs. James H. Means, Frederick T. Lord, Frank Fremont-Smith, Jr., and Joseph C. Ash.——Lieut.-Col. Fielding H. Garrison, Medical Corps, U. S. Army, held an informal historical conference on Diabetes and Insulin at the New York Academy of Medicine, February 21.——The Rehabilitation Institute and General Hospital Clinical Society, which meets March 9, will be addressed by Dr. Herman Goodman on "Clinical Manifestations of Syphilis."——A committee has been organized for the study and treatment of "Thrombo-Angiitis Obliterans" which meets, March 3, at the Academy of Medicine. Dr. Reginald H. Sayre is chairman of the committee and Dr. Benjamin Jablons is secretary.

NORTH CAROLINA

Quack Signs Death Certificate.—W. D. Russell, Hayti, was arrested, January 28, for practicing medicine without a license on a charge preferred by the superintendent, county health department, when it was found that Russell had signed a death certificate. Russell, it is reported, has been steadily treating the sick and in one instance pronounced death as due to "newmonia." It appears that he "got away with a couple of $25 fines." The Durham *Sun* says: "It is unthinkable that any man should be permitted to represent himself as a trained doctor to unsuspecting persons, although he may treat himself as much as he may desire. Such an act should be regarded as a most serious crime. We believe the state could well afford to protect its people to the extent of making deliberate misrepresentation by any man or woman, that he or she is a licensed physician, a penitentiary offense."

Personal.—Dr. Morgan P. Moorer has resigned as health officer of Buncombe County on account of ill health.——Dr. William E. Warren, Williamstown, has been reelected county physician of Martin County.——Dr. Robert D. Jones, Newbern, has been appointed a fellow in surgery at the Mayo Clinic for a term of three years.——Dr. Watson S. Rankin, Raleigh, has been elected a member of the executive committee, board of trustees of Wake Forest College.——Dr. George A. Wyeth, New York, delivered the annual address before the Raleigh Academy of Medicine recently on "Therapy of Accessible Cancers." Dr. J. W. McGee, Jr., was elected president of the academy for 1925, Dr. Hugh A. Thompson, secretary, and Dr. Henry M. Bonner, treasurer.——Dr. Thomas F. Costner, Lumberton, has been elected medical director of the La Fayette Life Insurance Company.——Dr. Gideon H. Macon, Warrenton, has been elected county health officer of Warren County.——Dr. Charles Daligny, Troy, has been reelected county health officer of Montgomery County.

OHIO

Society News.—Dr. Clarence W. Hopkins, Chicago, chief surgeon, Northwestern Railroad, addressed the Marion County Medical Society, Marion, February 3, on "Industrial Injuries."

Asphyxiation in Caissons.—An investigation of the death of four men, January 26, in a caisson at Columbus, showed that the cause was carbon monoxid asphyxia. The carbon monoxid was formed by the exhaustion of oxygen in the caisson by absorption into the soil, and this was probably aided by a steam jet used to dry the concrete of which the caisson was constructed. Dr. Emery R. Hayhurst, who with Dr. Nelson C. Dysart made the investigation, has formulated rules to prevent similar accidents and to govern conduct in case they occur. They are, in part, as follows:

Instruct all foremen to prohibit any workman from entering any caisson which has stood idle until the air has been forced into the bottom at a rate of at least 300 cubic feet per minute for at least five minutes. This rule applies to caisson sections of 16 ft. in height and upwards.

Drop a free-flame lantern to the bottom before permitting workmen to enter any caisson which has stood idle over 4 hours. If the lantern continues to burn, the air may be considered safe.

Extend air-inlet pipe by means of rubber hose or other extension to within one foot of the working floor in the bottom of the caisson.

Instruct foremen and two reliable workmen on each shift in the Schaefer, or prone-pressure, method of resuscitation, which is to be applied in fresh air at once for gas, electric shock, drowning or injury, when a workman ceases breathing.

Apply oxygen apparatus as soon as possible while still keeping the prone-pressure resuscitation going. At no time cease the prone-pressure resuscitation. Permit the use of no other methods of resuscitation (as by fire department, police department, etc.), and no other apparatus until a physician arrives and takes charge.

OKLAHOMA

Change of Date.—The date of the next annual meeting of the Oklahoma State Medical Association at Tulsa has been changed from May 5-7 to May 12-14.

Dr. Hayden Expelled.—Having been found guilty after trial by the Tulsa County Medical Society of performing an illegal operation, Dr. Elmer Forest Hayden was expelled by unanimous vote at a recent meeting.

Personal.—Dr. David Armstrong, Durant, has been appointed county physician of Bryan County.——Dr. Robert A. Brown, Prague, took charge of the Odd Fellows' Home at Chekotah, February 1.——Dr. George Hunter, Oklahoma City, has resigned from the city health department to become county health director, and Dr. George L. Borecky has been appointed to succeed him in the former position.——Dr. Eli Hughes, has been appointed city health officer of Stillwater.

PENNSYLVANIA

Bill for Epileptic Hospital.—A bill looking forward to erection of a special state hospital for epileptics who are now confined in insane asylums was introduced by Senator Steele, February 9, of Northumberland, Pa. The bill would set apart for such use a tract of land owned by the state near Selinsgrove, Snyder County.

Noncommissioned Officers Receive Diplomas.—The second annual class of noncommissioned officers of the medical department to be graduated from the Army Field Service School at Carlisle, received diplomas recently. Col. Charles R. Reynolds, commandant, gave the address. The honor graduate was Staff Sergeant James Ott, stationed at Plattsburgh, N. Y.

Personal.—Dr. and Mrs. John P. Getter, Belleville, left for a tour around the world, January 17, upon the completion of which Dr. Getter will not return to active practice, having been so engaged for forty years.——Dr. J. Parsons Schaeffer, professor of anatomy, Jefferson Medical College, addressed the February meeting of the Lycoming County Medical Society on "Morphological and Anatomical Variation in Symptomatology, Diagnosis and Treatment," illustrated with lantern slides.——Dr. J. Elmer Porter has been reelected president of the board of health of Pottstown.——The Danish government has conferred the knighthood of Dannebrog, the highest honorary order in Denmark, on Philip P. Jacobs, Ph.D., who has been connected with the National Tuberculosis Association for sixteen years.

Philadelphia

Social Work Conference.—The Third All Philadelphia Conference on Social Work will be held in Philadelphia, March 3-5.

Society News.—At a meeting of the Philadelphia County Medical Society, February 25, Dr. William S. Thayer, emeritus professor of medicine, Johns Hopkins University Medical Department, Baltimore, gave an address on "Observations on Bacterial Endocarditis"; Dr. James B. Herrick, clinical professor of medicine, Rush Medical College, Chicago, on "The Clinical Recognitions of Coronary Thrombosis," and Dr. Emanuel Libman, professor of clinical medicine, Columbia University School of Medicine, New York, on "Some Newer Phases of Cardiac Pathology from a Clinical Viewpoint."

Pneumonia Commission Report.—The pneumonia commission, appointed to study pneumonia and to devise means for preventing the disease, has prepared a report. The report contains articles on "Pneumonia with Special Reference to Diagnosis and Treatment," by Dr. David Riesman; "The Management of Pneumonia," by Dr. William Egbert Robertson; "Pneumonia in Children," by Dr. Edward J. G. Beardsley; "Pathology and Morbid Physiology of Pneumonia," by Dr. Randle C. Rosenberger; "Bacteriology of Pneumonia," by Dr. Samuel W. Sappington; "Pneumonic Plague," Dr. Judson Daland, and "What the Department of Public Health Can Do in Helping in the Pneumonia Problem," by Dr. Courtland Y. White.

SOUTH CAROLINA

Unfavorable Report on Chiropractic Bill.—The chairman of the house committee on medical affairs has announced that the chiropractic bill, which is substantially a duplicate of chiropractic bills introduced in the legislature for several years to provide a state board of chiropractic examiners, would be reported to the house unfavorably.

TEXAS

Supervision of State Hospitals.—A bill has been introduced into the legislature which would place the supervision of the state asylum system under a director of the state board of control, the superintendents being appointed by the board of control on recommendation of the director who would serve indefinitely, being subject to dismissal at any time. Psychopathic hospitals would be built at Dallas and Galveston. The asylums would be renamed state hospitals. The bill follows the recommendations of the Texas Eleemosynary Commission, which was appointed by the legislature to survey the state's asylum system.

VERMONT

Public Nursing Bill.—The chief features in the public nursing bill, now before the legislature, are a proposal to make the state board of examination and registration of nurses comprise two nurses and one physician in place of the present arrangement of two physicians and one nurse; and to reduce the training period for nurses from three to two years. At a public hearing on this measure in Montpelier, February 12, Dr. William G. Ricker, St. Johnsbury, proposed an amendment to the bill which would place the control of the nursing profession in the hands of the board of medical registration. Dr. Ricker declared, it is reported, that not even the nurses themselves are in favor of the bill as it is proposed. Among others who appeared against the bill, were Drs. Thomas S. Brown, superintendent, Mary Fletcher Hospital, Burlington, and Dr. Thomas Allen McCormick of St. Albans Hospital, St. Albans.

VIRGINIA

New Society Home.—With the erection of the new Medical Arts Building, Norfolk, the Norfolk County Medical Society arranged with the owners to add a half story and make the ninth floor the home of the society. The plan was carried out and the society took possession, January 1. A roof garden has been arranged and the floor divided so there is a large assembly room about double the size of the old quarters, and a reading room.

WASHINGTON

Testimony at Sanipractic Trial.—In the ten-day trial which recently ended with the judge ordering the charter of the American University of Sanipractic, Seattle, revoked, John D. Pryce, a tailor, testified that he refused a license which was offered him for $200. Knowing that this school claimed a four year course was necessary, Pryce asked how he could pass the state board examination and was told "Oh, that's easy. The state board has been fixed." A masseur testified that John C. Lydon, president of the school, told him he could obtain a diploma from the "university" for $500 without having to take a course and that he would then be safe from interference by the license department. The masseur did not accept the offer, but shortly afterward was arrested and convicted of practicing without a license. The masseur did not know, says the *Public Health League Messenger*, whether Lydon reported him or not. A Mrs. Harrison testified that the "doctor" from whom she purchased steam baths suggested that she obtain a diploma from the "university." She did not do so and Lydon threatened to close her place of business unless she was licensed. Others offered testimony to the effect that Lydon threatened "to close them up" unless they obtained a diploma from him. The gathering of evidence in this case was hampered at every turn, and most of the testimony was reluctantly given. The Public Health League gives the credit to Mr. T. J. Drew who on behalf of the state located and brought the evidence into court.

WEST VIRGINIA

Illegal Practitioner Arrested.—Following the coroner's investigation of the death of Mrs. Susanna Holderman, Wheeling, "Dr." Alexander Ross was arrested, January 31, on a charge of practicing medicine without a license. Ross, it is reported, administered "electric treatments" to this patient for rheumatism. He was held in $1,000 bond.

WISCONSIN

Society News.—Dr. Harold Douglas Singer, Chicago, addressed the Medical Society of Milwaukee County, Milwaukee, February 13, on "Crime and Punishment."

Milwaukee Health Commissioner Appointed.—The mayor of Milwaukee announced, February 13, the appointment of Dr. John P. Koehler as health commissioner, to succeed Dr. George C. Ruhland, who resigned last summer to accept a position with the Milbank Foundation, Syracuse, N. Y. Dr. Koehler has been head of the Milwaukee County Dispensary and formerly was deputy health commissioner.

Dr. Hall Honored.—The officers of the state medical society and more than fifty members of Alpha Nu Pi Omega fraternity attended a testimonial dinner at the University Club, Milwaukee, January 3, in honor of Dr. Sidney S. Hall, who was treasurer of the state medical society continuously for thirty-five years. Dr. Hall now resides with his daughter in Minneapolis.

Committee on Ethics.—The council of the State Medical Society of Wisconsin, Milwaukee, January 3, voted to appoint a committee to pass on matters of questionable medical ethics. The committee will address the member concerned to obtain his explanation when it is of the opinion that the code of ethics has been violated. If the question is a matter of publicity or advertising, a facsimile may be published at the discretion of the committee on a special page to be instituted in the state journal, together with the statement of the member concerned, but only after a due statement of this policy of the society has been published in the *Wisconsin Medical Journal*. The chairman appointed to this committee Dr. Edward Evans, La Crosse, Dr. L. Rock Sleyster, Wauwatosa, and Mr. J. G. Crownhart, secretary of the state society, Milwaukee.

WYOMING

Chiropractic Bill Killed.—The Cheyenne *Tribune* says that the biennial episode of the legislative serial, "Chiropractic," ended, February 9, when the house indefinitely postponed house bill No. 37—a bill to create a state board of chiropractic examiners. The house had previously amended this bill so that a chiropractor before being licensed would have to pass an examination in anatomy before the state medical examining board, whereupon the author of the bill, stating it would be useless to pass the measure in the amended form, moved its postponement.

GENERAL

Type Cultures of Bacteria.—The collection of type cultures of bacteria recently maintained at the Army Medical Museum, Washington, D. C., by the Society of American Bacteriologists, has been transferred to the McCormick Memorial Institute, Chicago. A grant secured by the National Research Council from the General Education Board will provide for the maintenance of the collection for a period of five years. While the immediate supervision of the cultures will be in charge of Dr. George H. Weaver, their general supervision will be vested in a committee representing the Society of American Bacteriologists, the Society of Pathologists and Bacteriologists, the American Phytopathological Society, the American Society of Zoologists and the McCormick Memorial Institute. The committee expects to enlarge the collection. Under the new arrangement, a charge will be made for cultures which, although not sufficient to cover the cost of the service, will help maintain the collection. A catalogue will be issued as soon as possible.

International Congress of Military Medicine and Pharmacy.—During the World War the allied nations set up the inter-allied surgical conferences, in which general rules were formed for the treatment of all cases of injuries. After the war the Belgian army medical corps took the initiative in calling together an International Congress of Military Medicine and Pharmacy, to which were invited all allied and neutral nations. The first meeting was at Brussels, with twenty nations represented; the second, two years later, was at Rome, with thirty-five nations represented. France is now organizing the Third International Congress of Military Medicine and Pharmacy, which will be held in Paris, April 20-25, 1925, at Vàl-de-Grace. The congress is to include scientific meetings, and the following subjects will be discussed: Technical specialization as the basis of field medical service work; methods for selecting the military contingent; etiology and treatment of traumatic arthritis; methods of analysis of dressing and suturing wounds. There will be demonstrations of technical equipment formed into field sanitary units, and an industrial and commercial exhibition supported by the board of trade, official receptions, a gala night at the Paris Grand Opera, a visit to Versailles, and specially organized inexpensive tours to many places of interest. All officers belonging, or having belonged, to the army or navy medical corps of allied, associate or neutral nations are invited, as well as their wives and daughters. Full uniform will be worn at the official receptions and fêtes and will be optional for foreign nations during the congress.

A Health Record.—The *Statistical Bulletin* of the Metropolitan Life Insurance Company, New York, notes that 1924 was the first year in which every important cause of death registered a decrease from the year previous. Among about 16,000,000 industrial policyholders in this country and Canada (about one seventh of the combined population of these countries) the death rate was 8.5 per thousand, which was 5.2 per cent. better than the year before. This record is due, it is said, to the absence of epidemic prevalence of any disease. The epidemic diseases of childhood registered the lowest rates on record, their combined death rate declining more than 20 per cent. The diphtheria death rate in particular was far the lowest ever recorded by this company, and represents a drop of 50 per cent. from the rate of ten years ago. This is credited to the increasing use of the Schick test and toxin-antitoxin and to the early administration of antitoxin to children with diphtheria. Notwithstanding a drop in the cancer death rate, it is still identical with that of three years ago and higher than for any year before 1921. As far as the wage-earning group of the American and Canadian people is concerned, if anything at all has been accomplished with this disease, it is clearly limited to keeping the death rate from rising. In a careful study of cancer last year, this company found that more than 2 per cent. of deaths from cancer, in a period of twelve years, occurred in persons under 25 years of age, and that at all ages combined the increase has been greater among males than among females. This study also developed the fact that after a child has reached the age of 10, there is more likelihood of his dying ultimately of cancer than of tuberculosis. While 443 deaths from alcoholism were reported in 1924, as compared with 436 in 1923, the death rate declined from 3.0 per hundred thousand to 2.8. The death rate from accidental causes combined was 62.5 per hundred thousand. There were fewer deaths from falls, machinery and railroad accidents, but deaths in automobile accidents again increased, the rate being 16.0 as compared with 15.4 in 1923. The mortality from automobile accidents has more than doubled since 1916, has tripled since 1915, quadrupled since 1913 and increased sevenfold since 1911.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Luke's Hospital, New York, $10,000, under the will of the late William E. Curtis.

The Presbyterian Hospital, New York, $7,500 by the will of Jeannette Robertson, to endow a bed in memory of her deceased sister.

Ten thousand dollars by the will of the late Woodman Mathews, for the establishment of a hospital in Burlington, Wash.

St. Luke's Hospital, Racine, Wis., $25,000, from William Horlick, Sr., to the building fund, for an addition which will cost about $100,000.

Lenox Hill Hospital, $100,000; Flushing Hospital, $5,000; Monmouth County Hospital, Long Branch, $5,000; Lying-In Hospital, New York, $10,000; Akron Hospital, Akron, Ohio, $5,000; New York Association for Improving the Condition of the Poor, $10,000, by the will of the late Fritz Achelis.

St. Anthony's Hospital, Woodhaven, L. I., $1,000, by the will of Mary S. Doran.

The New York Hospital, $200,000; the United Hospital Fund, $100,000; Henry Street Settlement, $200,000; Association for the Aid of Crippled Children, $60,000; by the will of Mrs. Kate S. Richardson.

The New York Post-Graduate Medical School and Hospital, and the Fresh Air Home for Crippled Children, each, $1,000, by the will of Mrs. Sara Gibbs Thompson.

Mount Sinai Hospital, New York, $100,000, and a contingent interest in the bulk of the estate of the late Emma Rosenwald and $1,000 by the will of the late Joseph B. Wertheim.

The Presbyterian Hospital, New York, $7,000, by the will of the late Helen Parish, Lakewood, N. J.

St. Rose's Hospital and St. Francis Hospital, New York, each $5,000, by the will of the late Maria M. MacSloy, the residue of her estate going to St. Vincent's Hospital.

Montefiore Hospital and Mt. Sinai Hospital, New York, each $1,000, by the will of the late Henry H. Jacobson.

The New York Eye and Ear Infirmary, $10,000; the New York Association for the Blind, $20,000, and the New York Association for Improving the Condition of the Poor, $300,000, by the will of the late Emily H. Bourne.

Mt. Sinai Hospital, New York, $100,000, from the estate of the late Mrs. Emma Rosenwald.

Lenox Hill Hospital, New York, $3,000, under the will of the late Frederick W. Fink; also $20,000 by the will of the late Rudolph Keppler.

The New York Skin and Cancer Hospital, $20,000; the New York Eye and Ear Infirmary and the Association for the Aid of Crippled Children, $10,000 each; the New York Ophthalmic Hospital and the New York Association for the Blind, $5,000 each, by the will of the late Rudolph Keppler.

Montefiore Home for Chronic Invalids, New York, $3,000, under the will of the late William L. Felsh.

Boston Children's Aid Society, Industrial School for Crippled and Deformed Children, Boston Home for Incurables, New England Peabody Home for Crippled Children, Perkins Institution for the Blind, each $10,000, under the will of the late William H. Maynard, Winchester, Mass.

The Vermillion County Hospital, Clinton, Ind., $1,000, from Mark E. Nebeker.

Crippled Children's Convalescent Hospital, Richmond, Va., also known as the Dooley Hospital, $10,000, from Mrs. Alfred L. Dupont, as a memorial to her mother.

St. Luke's Hospital, New York, $5,000; Loomis Sanitarium in Sullivan County, $1,000, and the residue of the testator's estate to a New York hospital, private or public, for the establishment and maintenance of a ward for young women, by the will of Elizabeth Remsen.

FOREIGN

Anniversary of Chinese Medical Association.—The National Medical Association of China is celebrating its tenth anniversary, the occasion being emphasized by a campaign to raise $100,000 for permanent headquarters for the association in Shanghai.

International Congress on Thalassotherapy.—The Fourth International Congress on Thalassotherapy is to convene at Arcachon, April 22, 1925. The one topic appointed for discussion is "The Seashore in Treatment of Rickets." The secretary of the meeting is Dr. Chauveau, villa la Rouvraie, Arcachon, France.

Scandinavian Surgical Congress.—The Fifteenth Surgical Congress of the Northland will convene at Copenhagen, June 25-27, 1925. Prof. T. Rovsing will preside. The topics appointed for discussion are "Treatment of Acute Osteomyelitis and Its Consequences"; "Nontuberculous Disease of the Adnexa," and "Tuberculosis of the Kidneys and Urinary Passages." Prof. P. Bull, Incognitogate 26, Christiania, is the general secretary.

The "Hospitalstidende."—As it enters on its sixty-eighth year, this excellent Copenhagen exchange becomes the official organ of the Danish Medical Association which will publish it henceforth. It has been owned by Prof. Thorkild Rovsing, who has been its editor for thirty-one years; he presents it to the association as a financially sound property. It has long been the organ of the association, the official name of which is Dansk Medicinsk Selskab. Dr. C. Sonne is the editor-in-chief. Dr. O. V. C. E. Petersen will continue to edit the society proceedings.

Radio Fraud in Examinations for Professors.—The *Gazette hebdomadaire des sciences médicales*, Bordeaux, reproduces the newspaper account of the examination for agrégé professors at Strasbourg, in charge of the dean, Prof. G. Weiss. In the course of the examinations he was called to the telephone and told that one of the candidates before him was in radio communication with an outsider who was broadcasting to him the answers to the questions. A receiver was found screwed to the table and a microphone in the hand of one of the candidates. In his room on a lower floor, his accomplice was found listening in to a radio apparatus with the textbook on the subject open before him. The candidate said that he had installed the apparatus as a scientific curiosity.

Deaths in Other Countries

Dr. **O. Larcher**, Paris, former vice president of the French Société de biologie, aged 81.——Dr. **Luis Marco**, Madrid, long editor of the *Revista Ibero-Americana* and contributor to other medical journals, aged 72.——Dr. **Marcel Bloch**, Paris, chief of the laboratory at the Faculté de médecine.——Dr. **Isidro Bogovia**, professor of anatomy and dean, Salamanca.——Dr. **Willi Lanz**, of Leysin and Montana, author of numerous works on tuberculosis and basal metabolism, aged 36.

CORRECTIONS

Dr. Guerrero President.—The secretary of the Philippine Islands Medical Association writes that through error he reported Dr. Antonio G. Sison as the newly elected president of that association (THE JOURNAL, February 7, p. 453). Dr. Luis Guerrero, Manila, is the newly elected president.

Medical Economics.—In the letter by G. H. Parmenter on the "Supply of the Rural Physicians" in THE JOURNAL, February 14, the concluding paragraph reads, "A lot of clamor comes from towns which formerly had from two to three physicians and now have more." The "more" should be "none."

Focal Infection in Peptic Ulcer.—In the article by Drs. P. T. Bohan and Russell L. Haden with this title, which appeared in THE JOURNAL, February 7, the statement was made that "Smithies divides duodenal ulcer into ten groups from the standpoint of etiology." This should read "gastric" ulcer instead of "duodenal" ulcer.

Government Services

New Assistant Surgeon General

Col. James D. Glennan, Medical Corps, U. S. Army, was promoted, February 9, to the grade of brigadier general and assistant to the surgeon general of the army, to fill the vacancy made by the retirement of Brig. Gen. Robert E. Noble. During the World War Colonel Glennan held a temporary commission as brigadier general and since the war has been in command of the Army Medical Center, Washington, D. C. General Glennan will reach the retiring age in March, 1926.

Control of Oyster Industry

Following immediately the successful work of the U. S. Public Health Service in its investigation of the outbreaks of typhoid fever in Chicago, New York and Washington, Surg.-Gen. Hugh S. Cumming called a conference at the Bureau of Public Health Service in Washington, February 19. There were represented at the conference officials from the Public Health Service, Bureau of Chemistry, Bureau of Fisheries, state and municipal health authorities, state conservation commissions and representatives of the shell-fish industry. Plans were discussed for safeguarding the shell-fish industry and for the regulation of sanitary conditions in this work for the protection of the public. The conference was presided over by Hon. Elliott Wadsworth, Assistant Secretary of the Treasury. Dr. Leslie L. Lumsden, in charge of the recent successful investigation of the typhoid fever outbreaks, presented a carefully prepared statement of the methods employed by him and his assistants of the Public Health Service in the study of the oyster epidemic. The relations of the Bureau of Chemistry and of the Bureau of Fisheries to the shell-fish industry were discussed respectively by Mr. W. S. Frisbie of the Bureau of Chemistry and Mr. Henry O'Malley, Commissioner of the Bureau of Fisheries. Full recognition of the efficient work of the Public Health Service in successfully tracing the main factor in the cause of the recent typhoid fever prevalence was fully accorded by all attending the conference, including the representatives of the shell-fish industry. There were present about 125 persons. The following resolutions were adopted:

1. The beds on which shell-fish are grown must be determined, inspected, and controlled by some official state agency, and the U. S. Public Health Service.
2. The plants in which shell-fish are shucked, or otherwise prepared or packed by the shipper, must be inspected and controlled by some official state agency and the U. S. Public Health Service.
3. The freedom from typhoid bacilli of the workers who handle shell-fish must be determined by some official governmental agency.
4. Failing to secure sufficiently high standards to protect the people as regards beds, floating and plumping practices and methods of shucking or other methods of preparation, a satisfactory practical method of pasteurization or other heat treatment, or chemical, or biologic method which produces satisfactory results, must be installed and operated under proper government supervision.
5. There must be such government supervision and such trade organization as will make plain the source of shell-fish and will prevent shell-fish from one source being substituted for those from another source. This will be chiefly a problem of the individual state.
6. The methods of shipping must be supervised, inspected, controlled and approved by the proper official federal and interstate agency.
7. The methods of storing, displaying for sale and dispensing must be determined, inspected and controlled by the proper state or city agency.
8. The product must conform to an established bacterial standard and must meet federal, state and local laws and regulations relating to salinity, water content, food proportion, and conform to the Pure Food Laws standards. There should be a revision of the existing bacteriological standards for oysters.

A committee of ten representing each group of the units attending the conference was appointed by Surgeon General Cumming to carry out a permanent program based on the resolutions adopted by the conference.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 12, 1925.

Tuberculosis and Rainfall: The Effect of Humidity

Interesting support for the theory of Dr. William Gordon of Exeter that the prevalence of tuberculosis is related to the degree of humidity in the air was afforded in a lecture by Sir Leonard Rogers at the Royal Society of Medicine. He has been struck by the points of resemblance between the bacillus of leprosy and that of tuberculosis, and also by their relation to climatology. Figures that he has prepared show that when a population has been infected with a quiescent form of tuberculosis it does not seem to suffer from leprosy, which indicates that tuberculization gives some immunity to leprosy. He said there was no proof that leprosy was hereditary, and equally it was now in doubt whether tuberculosis was hereditary. Actually, the danger of infection from tuberculosis was infinitely greater than was that from leprosy, and until the public could be induced to accept isolation, not much progress would be made. Turning to the incidence of leprosy in relation to climatology, Sir Leonard Rogers displayed rainfall and leprosy charts of India, which showed a close correspondence between the rainy areas and the areas in which leprosy was heaviest. It seemed, too, that much the same condition applied to tuberculosis; where the lowest humidity existed, the lowest rate of tuberculosis was found.

The Radium Institute

The Radium Institute was opened in 1911, and was intended at first for the reception of outpatients only. Not until October, 1922, did it become possible to carry out operations of any magnitude for the purpose of administering radium treatment. Seven private rooms were then provided for paying patients, with an operating theater and anesthetizing and sterilizing rooms. This addition to the work of the institute proved of such value that it was decided to equip a somewhat similar department for inpatients in poorer circumstances. This section is now complete. Forming a self-contained unit, it comprises two wards—one with four cubicles for females, and the other with three cubicles for males, an operating theater, service kitchen, bath room, and lavatories. While no charge is made to necessitous patients for treatment, operation and nursing, patients are expected, if possible, to contribute to the cost of their maintenance; but in the cases of absolute poverty, everything is free. Patients are received for treatment only on the certificates of their physicians. The Radium Institute is probably the best equipped institution of the kind in the world. It possesses 6 gm. of radium bromid, the money value of which is said to be almost $500,000. It has also the latest plant for obtaining from the radium emanation that is used in the treatments. For some years after the opening of the institute, treatment consisted almost entirely of external irradiation of the affected parts with screened radium application. Later on, better results were obtained by the introduction into growths in easily accessible situations of radium in tubes. With increasing experience in the use of radium emanation, it was found possible to prepare radium tubes of very small size, possessing an intense radioactivity; thus a "surgery of access" has gradually been developed with the surgeon and the radiologist working in cooperation, from which very remarkable results have been obtained. Since the opening of the institute, about 10,200 patients have been treated, and 4,500 have been treated in hospitals, infirmaries and nursing homes with emanation apparatus, which has been specially made and supplied, with the fullest instructions, to the surgeons or physicians in charge of the cases.

Habits and Heredity

Prof. E. W. MacBride, in a recent lecture, recalled that Herbert Spencer once declared that the question whether the effects of habits acquired during the lifetime of the individual could be transmitted to posterity was the most fundamental problem of biology. Many biologists, such as Cope Einer and Spencer, assumed that such a transference must have taken place in order to account for the course that has been followed by evolution; but others, on the basis of *a priori* considerations, denied the possibility of this and accounted for evolutionary changes by assuming the occurrence of random variations in all directions, and the preservation of favorable ones by natural selection. In the twentieth century this question had been brought to the test of experiments, and it had been shown that if a parent was brought up under the influence of one kind of environment, and the child continued under the same environment, the effect of the environment was intensified, and the child began where the parent left off; while if the child was restored to the original environment, the effect of the exposure of the parent to the abnormal environment was still shown by the child during the earlier portion of its life. This reaction by the child to the parents' experience might be compared to memory. In certain cases, when there was independent evidence to show that the parent had recently adopted a different method of life to that followed by its immediate ancestors, the child, if placed in ancestral conditions, would revive in an astounding manner old forgotten structures. The bearing of these discoveries on the theory of evolution was of colossal importance; it explained why ancestral stocks of animals split up into varied races as their descendants spread over the globe, and encountered varying climates, and had to escape new enemies and seek out different kinds of food. To educators they gave the hope that if children were educated in the right way, so as to bring out and exercise their mental powers, the effects of the education will not be lost with one generation but will make the next generation more receptive to education.

Artificial-Light Therapy

In an address to a meeting to promote interest in the use of artificial-light therapy, Prof. Leonard Hill said that sunlight and open-air treatment were well known among the ancients. The Greeks carried out their exercises in the open air in a state of nudity. There was not only the exercise in the open air and sunshine, but also the great advantage of allowing the sun and air to act on the skin. The sun was a great factor in defense against disease. During the last hundred years, industrial life had polluted the atmosphere with coal smoke, and had vitiated the quality of sunshine that we needed. Sunlight possessed a variety of rays with great power of affecting the skin. They did not penetrate, but were caught and absorbed by the living cells at the surface of the body, thus increasing the resistance of the body to disease. The National Institute of Medical Research found that when the skin was given a bath of ultraviolet rays, the blood acquired the power that it did not possess before of destroying microbes. The body responded in such a way as to prove that the power to resist disease germs was increased. Open air and sunshine kept up the breeding powers of animals and human beings. The latter were falling off because we lived a protected life. Science had shown that rickets was caused by the food being deficient in those vitamins that were present in the young growing plant and in the milk of cows that were fed on those plants. Science had discovered that this deficiency in the

food could be made good by exposure to the open air and sunshine. Smoke was cutting out the ultraviolet rays. In London we had only one third, or sometimes one half, of the sunlight available in the pure country. That was due to the smoke, and one of the immediate great hygienic reforms was to get rid of that pollution of the air. There was, however, a remedy in artificial means. Arc lamps had been used and cures effected in surgical tuberculosis and in rickets. The treatment should be carried out in all our cities and welfare centers. Those lamps should be in our schools, where the children, attired in loin cloths, should have musical drills and dance round the lamp of artificial sunlight. Then they would get the light of which they were deprived by smoke and a misty climate.

Posture and Rest in Muscular Work

An important report on the effects of posture and rest in muscular work has been issued by the Industrial Fatigue Research Board. The general tendency of modern industrial practice is stated to be the gradual disappearance of heavy manual operations and the retention of only manual operations involving light and dexterous work, which have an important bearing on the quality of the article manufactured. The mental effects on the operative tend to become more important than the bodily effects, with the consequence that many of the practical problems are most appropriately studied by psychologic methods. Nevertheless, processes remain in which the chief consideration is the actual weight lifted or the muscular force exerted, which can be measured by calorimetry. The conclusion is drawn that yoke carrying, that is, carrying by means of a cross-member set on the shoulders and provided with pails or baskets hung from it by chains, is the most economical as far as bodily exertion is concerned, and the least objectionable from the point of view of body strain. The body, when engaged in severe muscular effort, requires not only pauses for rest but also changes of posture. When the rest pause is taken in the course of industrial work, it is important that the posture should be changed, even if the rest lasts only a minute. Such changes serve to promote the circulation of the blood through fatigued muscles, and so contribute to efficiency of working.

Against White Bread

The Medical Officers of Schools Association has entered into the crusade against white bread. The council of the association has sent out the following circular to the headmasters of public and private schools, as the result of a general meeting held to discuss the relative values of white and stone-ground flour and bread. "The Council of the Medical Officers of Schools Association desires to urge the importance of securing for the rising generation an adequate supply of bread made from unbleached flour, from which all the important nutritive elements contained in the germ have not been removed, and asks for your earnest consideration of the following resolution passed by it as the result of the general meeting of the association and for your cooperation in putting it into effect: Whiteness of flour is not in itself an indication of its value as a food. Bread made from unbleached flour containing not less than 80 per cent. of the germ is attractive, digestible and nutritious, and should be provided for the growing child."

In a letter to the *Times*, the president of the association, in commending these views, points out that the English are slow to change, custom dies hard, and the appeal to the eye in the matter of white bread in many people overrides all other senses and is the strongest factor in explaining the popularity of this emasculated flour. Individual voices crying in the wilderness during the last twenty or thirty years have made no apparent impression on the public at large. The president suggests that the ministry of health take a hand in this matter and insure as far as it can that this most important and universal article of diet should not be subject to abstraction (such as the removal of the germ) and addition (such as the various bleaching agents and so-called "improvers"). He considers that this plea applies with special cogency to the needs of the immature and growing child.

PARIS

(From Our Regular Correspondent)

Feb. 10, 1925.

The Introduction of Social Service in the Paris Hospitals

In an address recently delivered by Dr. Guinon in his capacity as president of the Société médicale des hôpitaux for the year 1925, he referred to the rapid development of social service in the hospitals of Paris. This movement, which has rendered such signal service in the United States for a number of years, is still an innovation in France; however, it promises to be actively developed. Not only the services in aid of the tuberculous but also the maternity hospitals, the child welfare services, the neurologists and the adult welfare services are asking the assistance of the social service workers. M. Guinon, who for many years has been actively engaged in movements involving social aid, approves this new evolution and has become one of its most earnest advocates.

A Sanatorium for Students

In 1923, at the national convention of students' associations held at Clermont-Ferrand, a resolution was adopted approving the creation of a university sanatorium for students of both sexes affected with pulmonary tuberculosis. The number of such patients is considerable, and very frequently they do not receive the careful treatment they should have, because either there is not room for them in the sanatoriums or the cost of prolonged treatment is too high. A committee on organization was appointed with M. Léon Bourgeois as chairman and Prof. Léon Bernard serving as the chairman of the associated medical committee. Two large organizations, the Association métallurgique et minière and the Hôpitaux de Lyon, being about to found soon two sanatoriums at Petites Roches in the department of Isère, 10 miles from Grenoble, the students were able to secure, through the liberality of the Association métallurgique et minière, a parcel of land consisting of 3.5 hectares on which to erect their sanatorium. The plateau of Petites Roches, which has an altitude of 1,100 meters and is very favorably situated from a climatic point of view, is reached by a cable tramway up the mountain side. The sanatorium, the plans for which have already been accepted, will have a northern and a southern exposure. The three structural units will be arranged in the form of a widely opened fan. It will have a capacity of 105 beds, with single and double rooms. Libraries and laboratories will be provided to allow students of the various faculties to continue their studies. Students of medicine will be afforded the opportunity of visiting the two large adjoining sanatoriums, and can acquire thus a special type of experience that will be useful to them in the future. Students who have contracted the disease in a hospital service will be given free treatment, benefiting by the recent decree pertaining to industrial risks. In addition, an aid fund established in every general association of students will be utilized to defray a portion of the expenses of students who are unable to pay the full price for sanatorium treatment. It is expected that also the universities will assume a share of the burden. The corner stone of the sanatorium was laid, Oct. 26, 1924, Senator Honnorat presiding at the ceremony. The government has granted the sanatorium an appropriation of 1,300,000

francs, which represents 50 per cent. of the total estimate of the cost, which is in accordance with the law pertaining to sanatoriums. The sum of 300,000 francs has been collected through private subscriptions.

A Bolder Front Toward "Healers"

The Comité national de défense contre la tuberculose and the Société d'études scientifiques de la tuberculose have, during the past year, assumed a bolder front toward charlatanism, which is rampant in France possibly more than in any other country. Tuberculosis is the favorite domain of charlatans, and this appears to be inevitable. Tuberculous patients cannot always accept with resignation the, alas, often insufficient aid that legitimate medicine can give them, and they become the natural prey of venders of nostrums. We cannot do better than to reproduce here the terms of the frank declaration that has been published in the daily press and posted conspicuously in public places:

> For a number of years, in France possibly more than in any other country, patients suffering from or threatened with tuberculosis have been exploited by so-called "healers," who are becoming every day more frequent, who offer them pretended remedies, vaccines or serums, the mode of preparing which is kept a careful secret. Just recently some of these "healers" have gone so far as to affirm that "tuberculosis is at last conquered." The Comité national de défense contre la tuberculose and the Société d'études scientifiques have become aroused at the unjustifiable faith that the public often places in such products, and they consider it their duty to call the attention of the public to the fact that there is at the present time no chemical or biologic remedy, no serum nor vaccine, known to the medical profession the efficacy of which in the treatment of tuberculosis has been demonstrated. They desire to caution patients against the danger that they incur in wasting their money and losing precious time in trying all sorts of remedies, some of which are harmful, and all of which are useless, whereas their recovery or their permanent improvement depends on careful medical supervision, accompanied by special hygienic measures carried out rigorously and opportunely.

This is the first time that so much frankness has been shown in calling the attention of the public to these vital matters, and those who had the courage to take this initiative have merited our congratulations.

The Rôle of Prenatal Consultations in the Crusade Against Infant Mortality

The *Presse médicale* contains an interesting article on the subject of prenatal consultations by Professor Couvelaire, which includes a digest of his report to the Strasbourg convention, last September. Almost 35,000 children die annually in France during the last months of pregnancy, during confinement or during the hours following birth. Of 70,000 children who die annually before completing their first year of life, more than one third die from congenital affections or as the consequence of premature birth. Possibly 50,000 deaths annually might be avoided if efficacious measures were taken. In France, Pinard was the first to recognize the paramount importance of prenatal consultations. Prevention of the transmission of syphilis from the mother to the infant is usually possible. In syphilis contracted during gestation, fetal mortality occurs in 70 per cent. of the cases not treated, and in only 30 per cent. of the treated cases. In recent syphilis contracted before gestation, fetal mortality occurs in 65 per cent. of the cases not treated and in only 5 per cent. of the treated cases. In syphilis of long standing, the fetal mortality amounts to 20 per cent. of the cases not treated and to only 8 per cent. of the treated cases. Of eighty-four cases of death of the fetus in women presenting albuminuria of pregnancy, Couvelaire found only three cases in which prophylactic treatment had been advised and followed. As for narrowing of the pelvis, thanks to the performance, when needed, of symphyseotomy or cesarean section, the mortality of the new-born has dropped in the course of twenty-five years from 18 to 6 per cent., whereas the mortality of the mother is under 1.6 per cent. Much can be done to counteract premature births by preventing the mother from becoming physically exhausted during the gestation period. Periods of rest, as Pinard has long since shown, also have a beneficent effect on the weight of the new-born. An effort should be made to educate the public through instruction given in the schools, in the garrisons and to newly married couples, in order that every one may learn how to protect the prospective mother. Adequate protection implies a medical examination. The most important prenatal consultation hours are those associated with the Baudelocque clinic, since 1890. In 1921, 121,131 pregnant women took advantage of the consultation hours given in the various maternity hospitals of Paris. The collaboration of a social service is indispensable, especially in connection with the crusades against syphilis and tuberculosis, and also to prevent the new-born being deprived of the milk of its mother. In Paris, the social service feature of these consultations is assured by the "Maternités" section of the Service social à l'hôpital, which is under the direction of Mme. Getting.

HOLLAND

(From Our Regular Correspondent)

Jan. 28, 1925.

The Vienna Hygienic Exposition

Holland will take part in the international hygienic exposition to be held in Vienna, in April and May, 1925, and Professor Schuffner has been appointed chairman of the committee on organization for the Netherlands. The exhibitors hope to present a comprehensive display of all of Holland's hygienic enterprises; for example, the construction, organization and security (safety appliances) of factories; the antituberculosis and the antimalaria crusades, the disinfection service, serotherapy and vaccinotherapy, infant welfare, open-air schools, colonies of convalescents, and other undertakings. A special department will be devoted to colonial hygiene and to tropical diseases.

Medical Inspection of Adolescent Pupils

A committee of the assembly of medical inspectors of schools has published the results of its investigations on the problem of the medical inspection of adolescent pupils. The medical inspection of schools has been confined chiefly to the primary and intermediate grades. The years following puberty need supervision not only from the physical but also from the psychic point of view. The committee instituted inquiries in schools having adolescent pupils, and concluded that there is a need for medical inspection of adolescent pupils. Furthermore, the jurisdiction of the school medical inspector should be extended beyond the health of the pupils and should include the hygienic control of their environment. School medical inspectors should not, however, interfere in purely educational or pedagogic problems.

Vacation Outings for Children

The recent annual report of the society for securing vacation outings for children contains an account of the activities of the society since its foundation six years ago. The movement, which is a purely philanthropic one, does not establish school colonies for the children, but takes children from congested centers and places them for short periods with families in the country. During six years the society has provided opportunities for 22,000 children to spend almost a million vacation days in the country. The average cost per pupil for each vacation day was, in 1923, 1.10 florins, or about 45 cents. The government appropriation for this purpose was 75,000 florins, which was supplemented by other sources of income. The outlay is not nearly as great as would be required for the organization of school colonies in the rural districts. An exception was made in the case of children suffering from incontinence of urine, who were centralized in a special colony. In 1923, two school medical

inspectors from Amsterdam were appointed to inspect the different families with which the vacationists were quartered.

During the year 1923, 4,003 children were distributed among families, and 375 made up the special colony. A large portion of the children (1,500) were from Amsterdam. Statistics show that the children spent, on an average, forty days in the country and that, during this period, their weight increased, on the average, about 5 pounds (2.3 kg.).

Accidents Due to Electricity

The bureau of the inspection of labor has published a report on the accidents due to electricity that occurred in 1923. The figures show the importance of issuing new instructions in order to educate the public in regard to their conduct in connection with accidents from electricity. (It is interesting to compare these instructions with those contained in our letter of March 23, 1924 [THE JOURNAL, May 3, 1924, p. 1456] in connection with statistics for 1922.) For 1923, 133 accidents are recorded, twenty-two of which proved fatal. Of the twenty-two fatal accidents, seven were due to high tension and fifteen to low tension currents; one was due to a continuous current, and twenty-one to an alternating current. The wounds the most frequently observed were burns of the hands and arms (fifty-one) and ocular burns (eighteen). The periods of incapacity for work varied greatly, but in fifty-one cases incapacitation extended over more than one week, and in a few instances over a period of three months. To avoid as far as possible fatal accidents, the report emphasizes the need of inducing artificial respiration as soon as possible. The duration of artificial respiration should never be less than two hours, for it is only after the lapse of such a period that one can be sure that the signs of death are genuine and not apparent.

Trachoma

In a previous letter (THE JOURNAL, May 24, 1924, p. 1707), I referred to the report published by Smit and Wibaut on the campaign against trachoma in Amsterdam during the last few years. From the epidemiologic point of view, the authors consider the social environment of great importance, the disease being found almost exclusively where poverty and squalor hold sway. In Amsterdam, the main source of infection is the family, the majority of trachomatous subjects becoming infected before they are 6 years old. The school plays only a secondary part in the transmission of the disease. Most trachomatous patients postpone treatment until they have reached a stage too advanced to obtain much benefit. It is possible, however, by simple and relatively inexpensive methods to discover the new cases; to institute a close supervision during treatment, and to cure by means of quasicompulsory treatment all trachomatous children before their vision has been much impaired. As already stated, at Amsterdam, as the result of these measures, trachoma has been brought so far under control that hopes are entertained that the disease will be eradicated within from ten to twenty years.

The Proposed Law Pertaining to Infectious Diseases

I have already mentioned the energetic opposition of the medical profession to the proposed law pertaining to infectious diseases. The physicians protest more particularly against the exemptions and exceptions permitted in connection with vaccination and revaccination against smallpox. As a result, the government has seen fit to modify the law in some important particulars. With regard to vaccination, exemptions may be granted by the attending physician, provided the inspector of hygiene of the region gives his endorsement. If persons claim that they have philosophic or religious scruples against vaccination (in certain districts there are many opponents of vaccination), an inquiry instituted by the burgomaster of the place must show that the mode of living of such persons is in harmony with such scruples. Certain penalties are provided for false declarations. As for infectious diseases, physicians must in certain cases give official notification to the authorities in case of mere suspicion of the existence of an infectious disease. In case of confirmation of their suspicions, they must see to it that measures of isolation and prophylaxis are instituted, and, if they find it impossible to enforce such measures, they may demand that the patient be transferred to a hospital.

School Dental Services

At a recent convention of school medical inspectors, op't Eynde-Stolp presented a communication on the organization of a special dental service in the schools of Haarlem. The personnel consists of a graduate dentist and an assistant. Their equipment can be transported easily from one class to another. Pupils are not treated without the consent of their parents, which is usually given. The condition of the teeth of every pupil is entered on individual record cards, which are turned over to the school medical inspector. Of 3,000 children, 64 per cent. had defective teeth.

Fourth International Congress on Industrial Accidents

The steps taken to revive the permanent committee of the international congress of medicine as pertaining to industrial accidents have resulted in the reconstitution of international collaboration. Austria, Belgium, England, France, Germany, Italy, Russia and Switzerland have indicated their willingness to cooperate. National societies are being formed in several countries. The prospects are good for the inauguration of a congress in 1925, which will doubtless be held in Amsterdam.

VIENNA

(From Our Regular Correspondent)

Jan. 25, 1925.

Principles Supporting Expert Medical Opinion on Prospective Marriage

At the municipal marriage consultation bureau, which was established by the city of Vienna about two years ago as a subdepartment of the public health service, about 25 per cent. of the applicants for information and advice may be said to have been in good health, while of those who were sick about 25 per cent. were suffering from syphilis or gonorrhea; 15 per cent. had, or had had, tuberculosis; 20 per cent. were impotent or homosexual. Also women come for advice on birth control. Many persons who, though in good health themselves, have a family history of serious disease back of them ask whether they can conscientiously marry. As was brought out recently by Drs. Reithoffer, Bauer and Kautzky in a discussion before the Vienna Medicinische Doktorenkollegium, there are two main points to be considered: the interests of the inquirers and the collective interests of society. Often economic interests are predominant. In some instances, the two standpoints may be combined: a medical adviser may approve of a marriage but counsel against the wife bearing children. Such advice would be given if either party to the contract were suffering from a serious hereditary disease. If one party were affected with a given hereditary taint but otherwise healthy, the other party to the contract should not be affected in like manner. If both parties have the same hereditary taint, the probability of offspring being affected by it is almost 100 per cent. Marriages between relatives when the family is known to have a history of hereditary disease come under the same category. Familial otosclerosis, retinitis pigmentosa, certain types of obesity, hemophilia, diabetes and the mild types of mental disease are not necessarily contraindications to marriage, but, in the interest of

society, offspring cannot be regarded as desirable, lest semi-invalids and diseased families be perpetuated. It is in the interest of both parties to a marriage contract that each should have information with regard to the diseases that the other party has passed through. Syphilis and gonorrhea are both transmissible to a spouse even though they have been quiescent for a relatively long period. This possibility must not be lost sight of even though the propagation of offspring is improbable, as in the case of bilateral epididymitis and in the more severe types of affections of the adnexa or uterus. As a general rule, any person who has suffered from syphilis should not have sexual intercourse until the Wassermann test has proved repeatedly negative for a number of years. Examination of the cerebrospinal fluid is also very important. In case the cerebrospinal fluid is positive, or if metasyphilitic symptoms appear, such persons should be prohibited from marrying.

In tuberculosis, the social factor plays a big part. Through marriage, men usually come to lead a more regular domestic life. They frequent bars and restaurants less, and, owing to more temperate habits as regards drinking and smoking, there is a better chance of their disease being cured or brought to a latent state. On the other hand, the wife is exposed rather to an exacerbation, owing to an increase of household duties, and the possible bearing of children, who in turn will be more likely to develop an infection than otherwise. Every active case of tuberculosis is a contraindication to marriage. Only after two or three years of quiescence of the disease can marriage begin to be considered. In disturbances of potency, an exact determination of the cause is necessary. Psychic disturbances need not be taken so seriously as organic affections (multiple sclerosis, diabetes, chronic intoxications or infections). These are points to be considered by the medical experts who advise inquirers at the marriage consultation bureau. Unfortunately, Austria has been unable as yet to make examination before marriage compulsory, so that the condition of health of the contracting parties might be definitely known.

Physicians and the Income Tax

The physicians continue to complain of the injustice shown them in the computation of the income tax. Physicians are constantly being reproached for their meager tax returns, which, it is alleged, are much smaller than their mode of living would indicate. In recent years, the tax officials have been very strict with physicians, and the marked increase in the annual income tax that the individual physician has been compelled to pay has become oppressive. Then there is in addition the *Erwerbsteuer* or occupational tax, which amounts to about 6 per cent. of the annual income. In reality, only the industrial trades were supposed to pay this tax, but, by almost imperceptible extension of its application, it has come to be interpreted as including the professions as well. During recent months, still another tax has been added, the *Warenumsatzsteuer*, or the tax on the total annual turnover, which amounts to 2 per cent. of all money turned over or drawn by any business or undertaking conducted for profit, which thus includes a medical practice. The physician is not allowed to add this 2 per cent. to his fees, but must pay it out of his own pocket. Every physician is required to keep an exact account of all sums that he receives from his medical practice, and must allow the tax officials to inspect his books at any time. We are treated in precisely the same manner as every merchant or craftsman in easy circumstances, except that in dealing with us, as members of a liberal profession, caprice comes more into play. The newly elected *Aerztekammer*, or chamber of physicians, will take up as one of its first tasks the readjustment of the existing taxes on physicians.

BERLIN

(From Our Regular Correspondent)

Feb. 2, 1925.

Colored Films of Surgical Operations

At the recent meeting of the Berlin Medical Association, Dr. von Schubert, of the Charité Women's Hospital, exhibited a number of operative films in natural colors, produced by the Szczepanik method. The method is based on the fact that of groups of eighteen objectives three are brought into action at the same time, and blue, red and green filters are employed. In the projection apparatus, the film is stationary while the light is made to revolve about the film. By this method, the light becomes six times stronger than in other procedures of so-called additive three-color cinematography. To prevent skin burns resulting from the great heat, the light is conducted through water, and through the use of mirrors a light intensity of 50,000 candle-power is produced. Several operations on the uterus were exhibited; also a delivery which, owing to the natural colors of the objects presented, elicited the outspoken approval of the large audience. The method is still in the experimental stage, but after the addition of certain improvements, it will doubtless be of great value for purposes of instruction.

Compulsory Examination of Students

The medical examination of students was introduced some time ago at the two universities of Baden, Freiburg and Heidelberg (still earlier at the Dresdner Hochschule), and now a decree issued by the office of the minister of public instruction of Baden provides for the gratuitous compulsory medical examination and counseling of the students at the Karlsruhe Technische Hochschule (politechnicum). The decree reads as follows:

> Every student shall be required to submit to an examination as to the state of his health. The examination will be given under the direction of specially appointed physicians at such time and place as the faculty shall determine.

In an addendum, the faculty is requested to counsel with the academic committee on physical education and to adopt the necessary measures to carry out the order. In connection with the promulgation of the foregoing decree, the minister of public instruction has issued the following statement:

> Through the introduction of the medical examination of students, I not only have in mind to secure valuable scientific statistical material, but I regard such examination as an effective means of combating infectious diseases and an indispensable basis for the systematic organization of the necessary individual physical exercises.

Seventieth Birthday Anniversary of Professor Simmonds

Professor Simmonds, emeritus professor at the University of Hamburg and formerly a highly esteemed practitioner with an extensive practice, celebrated his seventieth birthday, January 14. Simmonds was born in St. Thomas, but was brought up in Hamburg. After serving as an assistant to Heller and Esmarch in Kiel, he accepted in 1882 a post in the Hamburg General Hospital. In 1889 he was appointed prosector, after which he occupied for a period of thirty-five years the chair of pathologic anatomy in the St. George Hospital. As counselor of the hospital physicians and as investigator and teacher, he enjoyed the respect of all who knew him. April 1, 1924, he retired on account of his advanced age. His scientific researches of former years deal with clinical, epidemiologic and bacteriologic problems, and his contributions on the origin of typhoid fever proved very valuable. During his long career he devoted himself to all branches of pathologic anatomy. In recent years, Simmonds became especially known for his description of a pathologic condition attended by disappearance of the hypophysis cerebri, which has been called after him the Simmonds disease.

Simmonds was active in securing the erection of the model pathologic institute in the General Hospital and in creating its excellent collection of pathologic specimens.

BUDAPEST

(From Our Regular Correspondent)

Feb. 1, 1925.

The Decline and Fall of the Numerus Clausus Law

Voices are heard in the Hungarian National Assembly that the time is ripe for the withdrawal of the numerus clausus law, which has brought only a bad reputation to Hungary. The first man who dared speak openly to the assembly was George Lukacs. He spoke last week as follows: "Having been abroad, I was struck by the change of opinion about Hungary. My opinion is that this is largely due to the reactionary spirit that prevails in the country. . . . Nobody can deny," he continued, "that the numerus clausus law is reactionary. The time has come when this dissonant echo of sorrowful times should no longer disturb the harmony among the inhabitants of Hungary. This still-born law would drive talented persons from Hungary, elements that have brought much credit to Hungary, particularly abroad. Hungary is recognized in the cultured West as the biggest exporter of dramatic works. There have been times when four different Hungarian pieces were running simultaneously on the stages of first class New York theaters. All of these have been the work of Jews, and I do not exaggerate when I state that nine out of ten dramatic pieces that are exported from Hungary are proclaiming Jewish genius." Similar speeches were made by others, so that it is probable that the numerus clausus will be nullified.

Hemophilia and Eugenics

At a recent meeting of the Budapest Royal Medical Society, Dr. Alexander Koranyi, professor of clinical medicine at the University of Budapest, exhibited a patient who from early childhood reacted to minor scratches with prolonged hemorrhage. The bleeding time of this patient, according to Duke's method, was six hours, and his blood, let into a Petri dish in a thin layer, clotted only after three hours and thirty minutes. The retraction of the blood coagulum was normal, pointing to a normal content of thrombocytes. This was proved also by the count, which showed 280,000 blood platelets per cubic millimeter. For these reasons the case was undoubtedly hemophilia. In the pathogenesis of hemophilia a great rôle is played, said Professor Koranyi, by the lack of thrombokinase, which is chiefly missing in the cells of the blood vessel wall. Thus, the formation of a local coagulum is wanting at the site of a blood vessel tear. This lack may be local or general, and accordingly the inclination to hemorrhage differs.

What position physicians shall take from a eugenic point of view is a question. Koranyi is of the opinion that, as not every son of a man suffering with hemophilia will be hemophilic, and as the number of hemophilic offspring decreases in the course of later generations, and the grade of hemophilia becomes attenuated, and since hemophilia is only rarely fatal, marriage should not be forbidden.

Induced Anisocoria in Pulmonary Diseases

Dr. M. Willner of Budapest has made extensive experiments to verify the presence of inequality of the pupils in unilateral pulmonary disease, first described by M. Andret. Willner recalls that Andret induced anisocoria artificially, and from its occurrence inferred the location of pulmonary disease. In the majority of cases the anisocoria is latent and can be produced only by the application of certain drugs acting on the vegetative nervous system. Dr. Willner experimented with drugs that affect the sympathetic and parasympathetic paths. If one drop of a 2 per cent. solution of atropin is instilled in the conjunctival sac, mydriasis ensues after one or two hours, and aniscoria is noticeable immediately. If mydriasis is bilateral, regression is observed because this is a much slower process on the affected side than on the healthy one. This phenomenon indicated that in addition to vagus paresis atropin causes also sympathetic excitation, which had contributed to the occurrence of the mydriasis. The action of pilocarpin and physostigmin in producing latent anisocoria is identical with that of atropin: vagus excitation causing mydriasis on the affected side and myosis on the healthy one. Anisocoria induced by scopolamin is more lasting than that provoked by atropin. Dr. Willner says further that anisocoria occurring after the induction of a pneumothorax can be attributed to sympathetic excitation caused by the operation.

A New Book on Semmelweis

The late professor of the Budapest University has been described in biographies in almost all modern languages. The latest addition to the series of books on Semmelweis is a novel, written by T. Maade.

Is It Allowable for a Physician to Increase His Charges After Rendering a Bill?

The *Magyar Orvos* deals with the question: Is it justifiable for a physician to raise a sum that he demanded for medical services at the termination of the attendance, which sum, not having been paid, became, in consequence of the depreciation of the currency, only a fraction of the value he demanded at the time of the attendance? Since the armistice it has often happened in Hungary that the currency depreciated within a few days to such an extent that the sum that was sufficient one day to buy an operating table was insufficient, a fortnight later, to buy a syringe. Of course, it would be an injustice to the physician if he would be forced by the law to accept for the treatment of a case of pneumonia, lasting three weeks, an amount which by the time of the deferred payment was worth not more than the fee of a single visit. If patients could be forced to settle their bills immediately after the termination of a course of treatment, such questions would not arise. But the same conditions that cause the currency to fall contribute also to the financial embarrassment of the patient so that many people, though quite reliable from the financial point of view, are unable to settle their bills. The *Magyar Orvos* is of the opinion that it ought to be regulated by legislation that deferred payments should be made in gold value.

Marriages

LEMUEL REMOND BROOME, Kinston, N. C., to Miss Dorothy Dawson Houchens of Charlottesville, Va., January 20.

JOHN M. G. RYLAND to Miss Virginia Randolph Davis, both of Richmond, January 27.

HARRY BAKWIN to Dr. Ruth Mae Morris, both of Chicago, at Paris, France, February 2.

PHILIP R. CLEAVER to Miss Minnie Matthews, both of Johnstown, Pa., Nov. 27, 1924.

HORACE MANCHESTER BROWN to Miss Annie Fleck, both of Milwaukee, Dec. 16, 1924.

OSCAR C. PAGE to Miss Nettie Clements, both of Brodnax, Va., January 18.

MILTON MANDEL to Miss Betty E. Snell, both of Chicago, February 12.

Deaths

Marshall Hall Fletcher ● Asheville, N. C.; Bellevue Hospital Medical College, New York, 1881; past president of the Medical Society of the State of North Carolina and the Buncombe County Medical Society; served in the M. C., U. S. Army, in France, during the World War; chief of staff of the Mission Hospital; aged 66; died, January 30.

George Hartwell Brickett, Augusta, Maine; Bellevue Hospital Medical College, New York, 1885; served in the Spanish American War, and with the American Red Cross during the World War; for several years ship surgeon on steamers plying between New York and South American ports; aged 64; died, January 31, at Pittsfield, Mass.

Walter Mandeville Gillock ● New York; Columbia University College of Physicians and Surgeons, New York, 1908; associate professor of surgery, New York Post-Graduate Medical School; on the staffs of the Harlem Hospital and New York Post-Graduate Medical School and Hospital; aged 42; died, February 15.

Isaac A. Lederman ● Louisville, Ky.; University of Louisville School of Medicine, 1896; clinical professor of otology, rhinology and laryngology at his alma mater; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the Jewish Hospital; aged 51; died, February 7.

Arthur Howard Cooper ● Lander, Wyo.; University of Nebraska College of Medicine, Omaha, 1902; president of the Fremont County Medical Society; served in the M. C., U. S. Army, with the rank of captain, during the World War; aged 51; died, February 7, of pneumonia and uremia.

Howard D. Miller, Fort Steilacoom, Wash.; Drake University College of Medicine, Des Moines, 1889; formerly on the staffs of the Northern State Hospital for Insane, Sedro Wooley, and the Western State Hospital for Insane, Fort Steilacoom; aged 57; died, January 24, at Seattle.

Edward M. Singewald, Baltimore; University of Maryland School of Medicine, Baltimore, 1888; member of the Medical and Chirurgical Faculty of Maryland; instructor of neurology, Johns Hopkins University Medical Department, Baltimore, 1891-1914; aged 56; died, February 10.

Joseph Louis Howard ● San Francisco; Cooper Medical College, San Francisco, 1900; L.R.C.S., Edinburgh, 1902; L.R.C.P., London, and L.R.C.S., England, 1902; aged 55; died, Dec 29, 1924, at Honolulu, Hawaii, of cirrhoiss of the liver and myocarditis.

Charles James Wilson, Winchester, Wis.; Victoria University Medical Department, Toronto, Ont., Canada, 1882; member of the State Medical Society of Wisconsin; aged 61; died, January 29, at Ashland, of aortic stenosis and chronic myocarditis.

Beverly Walker Smith ● Franklin, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1892; formerly vice president of the Louisiana State Board of Health; proprietor of St. Mary Sanitarium; aged 55; died, January 29, of pneumonia.

Charles H. Ermentraut, Woodhaven, N. Y.; United States Medical College, New York, 1883; for twenty-five years supervisor of the Queens County (N. Y.) and Brooklyn Board of Health; aged 67; died, in December, following a long illness.

James Bell Hester, Buffalo, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, Fort Worth, 1917; member of the State Medical Association of Texas; aged 37; died, February 13, of heart disease.

John James Cotter ● New York; Columbia University College of Physicians and Surgeons, New York, 1898; on the staffs of the New York Eye and Ear Infirmary and the Reconstruction Hospital; aged 55; died, February 11.

Daniel James Corrigan, Webster, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1898; member of the Medical Society of the State of New York; aged 48; died, January 6, of typhoid pneumonia.

Allen Grandberry Thurman, Appomattox, Va.; University College of Medicine, Richmond, 1900; member of the Medical Society of Virginia; aged 48; died, January 31, at the Marshall Lodge Memorial Hospital, Lynchburg.

William Richard Randolph Granger, Newark, N. J.; University of Vermont College of Medicine, Burlington, 1889; member of the Medical Society of New Jersey; aged 64; died, January 31, of cerebral hemorrhage.

Floyd Albert Smith, Canton, Ill.; University of Illinois College of Medicine, Chicago, 1913; member of the Illinois State Medical Society; formerly county coroner; aged 36; died, January 27, following a long illness.

John Franklin Keefer, Sterling, Ill.; Rush Medical College, Chicago, 1881; member of the Illinois State Medical Society; formerly proprietor of the Keefer Hospital; aged 66; died, February 2, of cerebral hemorrhage.

William Breathwit ● Pine Bluff, Ark.; Hospital College of Medicine, Louisville, Ky., 1894; specialized in ophthalmology, otology, laryngology and rhinology; president of the school board; aged 53; died in January.

Walter J. Crook, Dallas, Texas; University of Texas Department of Medicine, Galveston, 1896; member of the State Medical Association of Texas; aged 50; died, January 27, of cerebral hemorrhage.

Byron F. Kingsley, San Antonio, Texas; Detroit (Mich.) Medical College, 1874; Long Island College Hospital, Brooklyn, 1874; member of the State Medical Society of Texas; aged 72; died, February 1.

George D. York, Newark, N. Y.; University of Buffalo Department of Medicine, 1881; member of the Medical Society of the State of New York; died, Dec. 22, 1924, of cerebral hemorrhage.

Frank Edward Heathfield, Philadelphia; Medical School of Harvard University, Boston, 1924; intern at the Germantown Hospital, where he died, February 4, of streptococcus sore throat, aged 30.

John Thomas Cole, Washington, D. C.; Georgetown University School of Medicine, Washington, 1891; member of the Medical Society of the District of Columbia; aged 68; died, February 4.

William Milton Slaght, Grand Blanc, Mich.; University of Michigan Medical School, Ann Arbor, 1889; member of the board of health for many years; aged 64; died, January 29, of heart disease.

Charles Ross Harry ● Stockton, Calif.; Cooper Medical College, San Francisco, 1890; president of the staff of St. Joseph's Hospital; aged 61; died suddenly, February 6, of heart disease.

Charles Kendall Clarke, Fiskeville, R. I.; Bellevue Hospital Medical College, New York, 1874; formerly state senator and chairman of the school board; aged 74, died, February 1.

Edward Franklin Cudmore, New York; Baylor University College of Medicine, Dallas, Texas, 1920; member of the Medical Society of the State of New York; aged 29; died, February 8.

George P. Lumsden ● Medical Inspector, Commander, U. S. Navy, retired, Washington, D. C.; Medical College of Virginia, Richmond, 1876; aged 71; died, in January, of heart disease.

Valdimir Kutschuck Webster, Brooklyn; University of Kharkov, Russia, 1894; member of the Medical Society of the State of New York; aged 58; died, February 4, of heart disease.

Howard W. Jones ● Baltimore; University of Maryland School of Medicine, Baltimore, 1903; on the staff of St. Agnes' Hospital; aged 44; died, January 28, of pneumonia.

Philip H. Flood, San Francisco; Georgetown University School of Medicine, Washington, D. C., 1874; aged 84; died, February 8, of chronic myocarditis and arteriosclerosis.

Patrick Henry Keeter, Flippin, Ark.; University of Arkansas Medical Department, Little Rock, 1914; member of the Arkansas Medical Society; aged 43; died in January.

William Stansberry Simpson, Ontario, Calif.; Hahnemann Medical College and Hospital, Chicago, 1876; formerly a practitioner in Iowa; aged 77; died, January 31.

William Hays Pollock, Huron, Ohio; Cleveland Medical College, 1895; member of the board of education; aged 60; died, January 23, at Cleveland, following an operation.

Siebert Balaban, Brooklyn; University of Heidelberg, Germany, 1884; member of the Medical Society of the State of New York; aged 68; died, February 5, of pneumonia.

Lloyd Gully Campbell, Birmingham, Mich.; University of Michigan Medical School, Ann Arbor, 1908; aged 41; died, February 3, at Marion, Ind., following a long illness.

Charles Anderson Pope Dunnavant, Kirkwood, Mo.; St. Louis Medical College, 1882; member of the Missouri State Medical Association; aged 69; died, January 30.

George Henry Franklin ● Hightstown, N. J.; Medical Department of Columbia College, New York, 1879; aged 68; died, Dec. 28, 1924, of pneumonia.

Marvin Jackson Kingina, Hazard, Ky.; Vanderbilt University Medical Department, Nashville, Tenn., 1924; aged 28; was shot and killed, February 7.

William Matthew Adams ● Shreveport, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1903; aged 47; died, January 30.

John Hudock, Mahanoy City, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1920; aged 37; died, January 24, of pneumonia.

Noah W. Reichard ● Bangor, Pa.; Jefferson Medical College of Philadelphia, 1887; aged 67; died suddenly, January 27, of heart disease.

Oscar F. David, Jordon, Mont.; Medical Department Hamline University, Minneapolis, 1895; aged 64; died, February 1, of heart disease.

Eugene C. Cloutier, Woonsocket, R. I.; University of Pennsylvania School of Medicine, Philadelphia, 1903; aged 47; died, January 23.

William L. Shoemaker, Philadelphia; Hahnemann Medical College of Philadelphia, 1876; aged 70; died, January 28, of pneumonia.

William Henry Eckert, St. Louis; Barnes Medical College, St. Louis, 1904; aged 60; died, January 17, of cerebral hemorrhage.

William Loudas Yancy Currey, Sandyville, W. Va.; Kentucky School of Medicine, Louisville, 1893; aged 55; died, January 20.

Russell C. Markham, Marquette, Mich.; Hahnemann Medical College and Hospital, Chicago, 1881; aged 74; died, February 1.

Watson Lycurgus Coleman, Dallas, Texas; University of Georgia Medical Department, Augusta, 1881; aged 68; died, February 5.

Charles Ernest Landis, Shippenburg, Pa.; Jefferson Medical College of Philadelphia, 1892; died, January 17, of heart disease.

L. M. Thacher, Hamlin, W. Va.; Medical College of Virginia, Richmond, 1889; aged 66; died, January 28, of heart disease.

Charles Otis Miller, Saxton, Pa.; Baltimore Medical College, 1896; aged 59; died, January 29, of cerebral heomrrhage.

James William Morgan, Wapello, Iowa; College of Physicians and Surgeons, Keokuk, 1884; aged 70; died, February 6.

Albert William Carpenter, Owensboro, Ky.; Hospital College of Medicine, Louisville, 1877; aged 73; died, February 3.

James H. S. Hutchinson, Hayesville, Ohio; Jefferson Medical College of Philadelphia, 1878; aged 70; died, February 3.

Read Letts Bell ● Springfield, Ohio; Medical School of Harvard University, Boston, 1876; aged 74; died, February 4.

John T. Huff, Parsons, W. Va.; Winchester (Va.) Medical College, 1857; Civil War veteran; aged 88; died, January 25.

R. M. Wellborn, Arlington, Tenn.; Memphis Hospital Medical College, 1891; aged 58; died, January 23, of heart disease.

Hamlet Jarvis, Elkridge, Md.; College of Physicians and Surgeons, Baltimore, 1880; aged 69; died, January 31.

Francis O. Harrison, Christopher, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 78; died, January 29.

Maloy M. McCullough, Greenfield, Ohio; Starling Medical College, Columbus, 1897; aged 54; died, February 3.

Robert Smith Spears ● Westplains, Mo.; Atlanta (Ga.) Medical College, 1890; aged 58; died, January 17.

Albert Henry Koenig, Omaha, Neb.; Creighton Medical College, Omaha, 1904; aged 44; died, January 19.

John F. Criswell, Marion, Ohio; Jefferson Medical College of Philadelphia, 1879; aged 79; died, February 9.

Henry Hadley Smith, Hudson, N. Y.; Albany Medical College, 1874; aged 76; died suddenly, January 22.

Arthur Leicester George, Albany, N. Y.; Baltimore Medical College, 1890; aged 69; died, in January.

Carey A. Stout, Cincinnati; Eclectic Medical Institute, Cincinnati, 1897; aged 49; died, January 22.

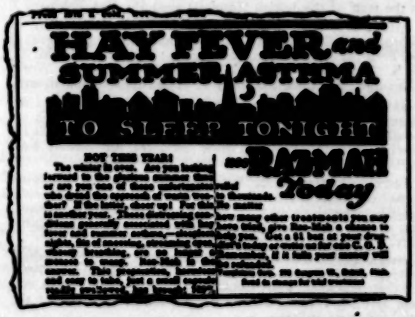
The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

RAZ-MAH

Another Nostrum for Asthma and Hay-Fever

Are you kept awake by asthmatic attacks or hay-fever? "To sleep tonight, use Raz-Mah today." This is the slogan for a nostrum put out by Templetons, Inc., of Detroit for sale in the United States, and by Templeton's Ltd., Toronto, for sale in Canada. The alleged history of the origin of this nostrum seems to vary, depending on whether one purchases the product as sold in Canada or that sold in the United States. The story given in the advertising circular that goes with the product sold in this country is to the effect that the writer of the circular had for ten years suffered with "hay fever or summer asthma." He tried innumerable treatments and got no relief, until finally "a chemist friend"



A typical newspaper advertisement of Raz-Mah reduced in size.

suggested that he try a mixture which was later put on the market as Raz-Mah, and it brought him complete freedom from his trouble.

Thus:

"The writer knows well what it means to suffer from what doctors have described as Hay-fever or Summer Asthma. For more than ten years, during the summer months, I seldom knew what it was to get through a night without being awakened by one or more violent fits of sneezing, followed by clogged nostrils and difficult breathing and general wakefulness during the early morning hours. Similar attacks would occur several times during the day. I found no treatment that gave relief, and I think I tried them all. Then a chemist friend of mine suggested I try Raz-Mah—though it wasn't called Raz-Mah, or anything else, in those days—but it brought me, and still brings me, complete freedom from my old trouble."

The Canadian circular is to the effect that Mr. J. G. Templeton, after "perfecting the formula for his rheumatic remedy," devoted his time to a specific for asthma, then:

"By slow and careful study and experiment over several years a formula was finally arrived at which produced the most remarkable results. No case was too far gone, no attack too severe to respond to the treatment. Three years of actual test of this formula have convinced Mr. Templeton that he has evolved the ideal treatment for asthma and hay fever. Under the trade name of Raz-Mah this remedy is now offered to the public."

You pay your money and take your choice. Inquiries were received from various parts of the United States and Canada asking for information regarding the composition of Raz-Mah, which, from the reports, evidently contained drugs of some potency. Dr. H. E. Young of Victoria, B. C., the Provincial Officer of Health for British Columbia, reported to The Journal more than four years ago that an analysis

made by the National Department of Health at Ottawa of Raz-Mah as sold in Canada showed that each Raz-Mah capsule contained a little more than 4 grains of acetylsalicylic acid (aspirin), about ½ grain of caffein and 9/10 of a grain of bone-black. About the same time the A. M. A. Chemical Laboratory made some cursory tests of this preparation, and it also reported finding acetylsalicylic acid (aspirin), caffein and charcoal.

In September, 1924, it was decided to make a more complete analysis of the preparation, and original packages were purchased and turned over to the A. M. A. Chemical Laboratory for investigation. In due time the laboratory reported:

LABORATORY REPORT

"One original box of Raz-Mah manufactured by Templetons, Inc., Detroit, Michigan, was submitted to the A. M. A. Chemical Laboratory for examination. The box contained thirty-two capsules each containing an average of 0.42 gram (6.5 grains) of a crudely mixed grayish powder. Microscopic examination showed starch grains, some of which were colored by presence of iodin; crystals resembling acetylsalicylic acid (aspirin) were also present. Qualitative tests indicated the presence of caffein, acetylsalicylic acid, iodid, carbon (charcoal[1]) calcium, magnesium, iron, sodium, potassium, sulphate and starch. There was also some other material which was either plant extract or material extracted from a charred substance (such as charcoal); this material was not identified. Arsenic compounds, emodin-bearing drugs, alkaloids other than caffein or other antipyrectics than acetylsalicylic acid were not found. The amount of ash was 4.46 per cent. Quantitative determinations yielded the following:

Caffein	9.15 per cent.
Acetylsalicylic acid (aspirin)	67.83 per cent.
Carbon (charcoal)	10.75 per cent.
Iodid (I^-)	2.26 per cent.
Moisture	0.67 per cent.
Starch	1.52 per cent.
Calcium (Ca^{++})	0.09 per cent.
Magnesium (Mg^{++})	0.18 per cent.
Sodium (Na^+)	1.21 per cent.
Potassium (K^+)	0.46 per cent.
Insoluble materials (other than charcoal)	0.44 per cent.
Undetermined	5.44 per cent.
	100.00 per cent.

"From this analysis it appears that Raz-Mah is essentially a mixture of caffein, acetylsalicylic acid and an iodid.

"Another sample of Raz-Mah (the contents of which were not submitted to quantitative examination) differed from the specimen analyzed in that oil of spearmint was present and iodid was absent. The market specimens, therefore, differ in composition."

Evidently from the chemists' analyses, each capsule of Raz-Mah contains approximately:

Acetylsalicylic acid (aspirin)	4½ grains
Charcoal	1 grain
Caffein	½ grain

The directions call for two capsules of Raz-Mah at a dose with from three to four doses a day. This means that the maximum daily dose (eight capsules) contains approximately 35 grains of acetylsalicylic acid (aspirin) and 4½ grains of caffein. The presence of iodids in certain samples seems to be accidental, the Canadian chemists having, apparently, found none, and the A. M. A. chemists being unable to find any in some of the specimens examined. The variable composition may be due to the careless methods employed by nostrum manufacturers or it may indicate that, for reasons best known to themselves, the exploiters of Raz-Mah have seen fit to change the formula for their product.

It appears, then, that Raz-Mah, whose "formula" was finally arrived at "by slow and careful study and experimentation over several years," is to all intents and purposes nothing more than powdered aspirin and caffein. No wonder the "patent medicine" interests fight to the last ditch against formula disclosure.

1. The presence of charcoal and impurities suggest that the caffein might possibly have been added in the form of coffee roaster flue dust.

VIRILIGEN, GLANDULAR COMP. AND PINEAL COMP. NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. PUCKNER, Secretary.

Viriligen.—This product of the G. W. Carnrick Co. is marketed in the form of tablets, capsules and ampoules, each of which is stated to contain "desiccated extracts of anterior pituitary, suprarenal cortex, lymph, brain and spinal cord substance, testis and 1/10 gr. thyroid." The following appears on the label of this pluriglandular mixture: "Viriligen, a true physiological restorative in lowered virility of functional origin." The house organ of the Carnrick Co., *Journal of Organotherapy*, for March, 1924, advertises that Viriligen is "indicated in lowered virility and sexual neurasthenia of functional origin."

There is no evidence that extracts of the anterior portion of the pituitary, suprarenal cortex, lymph, brain, spinal cord and testis have any therapeutic value in sexual neurasthenia or lowered virility (sexual capacity?). The administration of thyroid in therapeutic doses to persons suffering from neurasthenia is often harmful. The formula given for Viriligen is meaningless so far as a rational therapy is concerned, for there is no indication of the amounts and activity of the several constituents (other than thyroid) which the preparation is said to contain.

The Council finds Viriligen inadmissible to New and Nonofficial Remedies because (1) its composition is indefinite; (2) the therapeutic claims are unwarranted, and (3) it is an unscientific mixture.

Glandular Comp. (Male), Special Formula No. 1 (G. W. Carnrick Co.).—This comes in tablets and capsules which are stated to contain "Thyroid" 1/10 gr., "Pituitary" 1/10 gr., "Suprarenal" ¼ gr., "Orchic" ¼ gr., "Physiological Salts Comp." ¼ gr.

Glandular Comp. (Female), Special Formula No. 2 (G. W. Carnrick Co.).—This comes in tablets and capsules and, it is claimed, contains "Thyroid" 1/10 gr., "Pituitary" 1/10 gr., "Suprarenal" ¼ gr., "Ovarian" ¼ gr., "Physiological Salts Comp." ¼ gr.

Pineal Comp. (Male), Special Formula No. 3 (G. W. Carnrick Co.).—Like the preceding, this also comes in tablets and capsules. It is said to contain "Anterior Pituitary" ⅙ gr., "Thyroid" ⅙ gr., "Suprarenal" 1 gr., "Orchic" 1½ gr., "Pineal" 1/10 gr., "Physiological Salts Comp." ¼ gr.

Pineal Comp. (Female), Special Formula No. 4 (G. W. Carnrick Co.).—This, too, comes in tablets and capsules, and is said to contain "Anterior Pituitary" ⅙ gr., "Thyroid" ⅙ gr., "Suprarenal" 1 gr., "Ovarian" 1½ gr., "Pineal" 1/10 gr., "Physiological Salts Comp." ¼ gr.

Glandular Comp., "Male" and "Female," is recommended by the Carnick Co. for "Hypoadrenia, Asthenia, Low Blood Pressure, Fatigue Syndrome." In the firm's advertising, a quotation is cited to the effect that epinephrin is useful in delaying the onset of fatigue; however, the author referred to its action as it is secreted, and this does not apply in any way to the oral administration of minute doses of the suprarenal substance. There is no evidence for the value of these two combinations, and the routine administration of thyroid to patients suffering from various complaints is productive of harm.

Pineal Comp., "Male" and "Female," is recommended by the Carnrick Co. for "Backward Children, Mongolism, Retarded Mental or Physical Development." Whatever may be said of the influence of pituitary on physical development, there is no evidence that the administration of any substance in these two compounds exerts any favorable influence on mental development. Though such a view was expressed some years ago, further observation failed to lend any support to it. The routine administration of the thyroid said to be in these preparations may be productive of harm.

The Council finds Glandular Comp., "Male" and "Female" and Pineal Comp. "Male" and "Female" of the G. W. Carn-

rick Co. inadmissible to New and Nonofficial Remedies because (1) they are unscientific mixtures, (2) their composition is indefinite and (3) the therapeutic claims are unwarranted.

Correspondence

THE USE OF ASTRINGENTS IN GONORRHEA

To the Editor:—I have recently seen several cases of prolonged gonorrhea in which the symptoms were practically negligible, but from which the gonococcus could be obtained in smears after many months of treatment. I think the time is ripe to raise a voice against the recently revived use of astringents in the treatment of this disease. The advertising propaganda of the manufacturers of zinc borosalicylate has done much to interest many physicians in the use of this preparation. The smooth and easy course of the disease from the patient's standpoint has done much to popularize the plan.

Compared with the general cycle of the disease, it is but natural that physicians would be interested in a thing that quickly relieves the patient of his greatest annoyance—the urethral discharge. That it generally does this there can be no doubt, as the patients I have seen who have been the victims of this mode of attack have all spoken rather lightly of the disease and extolled the treatment, though none of them felt they were cured, and most of them said their discharge recurred if they missed treatments.

In eastern Pennsylvania, and probably throughout the country, this treatment has become quite popular among those who seldom use the microscope, so that it is becoming increasingly common to encounter its victims. On the cessation of treatment for a few days, the urethral strippings or the slight morning discharge often exhibit many gonococci. So sanguine is the patient regarding the attack, which, he says, "never gave him more than a few days of discomfort," that its aftermath is sure to be a great spread of the disease.

The entire idea of astringents while the gonococcus is present is so unsound and antagonistic to Nature's means of cure that they should find no place in its treatment. When we consider what Nature tries to do, we will see that astringents are directly opposed to her success.

Briefly stated, the patient recovers from gonorrhea by the destruction of the infecting organisms. This is done largely by the tissues themselves, and our treatments are of value only so far as they aid these tissue processes. These processes are: capillary engorgement; outpouring of serum and mucus; diapedesis of white blood cells, and the development of antisubstances. The results of these are the flushing into the urethral lumen of many of the gonococci from the deeper mucosal spaces and their ingestion by polymorphonuclear leukocytes, as well as the destruction of the deeper lying gonococci by the antisubstances. In brief, tissue diarrhea, phagocytosis, bacteriostasis and bacteriolysis.

Bacterial growth in the tissue spaces is dependent on the proper food. If the food is plentiful and well suited, there will be luxuriant growth and there will be sufficient toxin formed to stimulate the production of bodies antagonistic to the germ. Thus, there being no immunity, the stimulation of the tissue bacteriostatic and bacteriolytic powers is dependent on the early multiplication of gonococci in sufficient numbers. A few develop them early; most are tardy, and in some it is a very slow process requiring months.

From the clinical picture of the disease it is evident that it is easier quickly to bring about a partial tissue bacteriostasis than bacteriolysis; but it is likewise evident that a complete bacteriostasis is difficult to produce. If we could rob the tissue bacteria completely of their proper food, the remaining germs would complete their life's cycle and die, and the disease would be cured within a short time.

The production of such a condition is the only possible hope from the use of astringents, and it is perfectly obvious that this is rarely, if ever, accomplished. Zinc borosalicylate offers no greater hope of this than the hundreds of other astringents used and discarded by our forefathers. It does reduce the patient's respect for a serious disease that is one of society's greatest menaces, and is sure to be the cause of many innocent infections.

P. S. Pelouze, M.D., Philadelphia.

[Comment.—So-called zinc boro-salicylate, the present exploitation and use of which Dr. Pelouze justly deprecates, is not new. It was being exploited in Germany ten or fifteen years ago under the name of "Dr. A. Foelsing's Mucosan"; analysis made about that time threw doubt on the claim of its being "a definite compound"; rather, under the scrutiny of German chemists, the product seemed to be a loose combination of zinc salicylate, salicylic acid and boric acid. More recently there has been an active campaign to influence American physicians to use the product, this time under the proprietary names of "Neisser-San-Kahn" (York Laboratories, York, Pa.) and Zinc-Borocyl (Al Sano Chemical Products Company, Chicago). Both are recommended for genito-urinary work, particularly local infections of the urethra. The Council on Pharmacy and Chemistry, in its reports on these two products, has stated (The Journal, Jan. 20, 1923, p. 201; May 24, 1924, p. 1713) that the submitted evidence failed to show that the preparation claimed to be zinc borosalicylate has any advantage over established zinc salts; that zinc sulphate is indicated in only certain forms of urethritis; and that the use of substances that are unessential modifications of established drugs is unscientific, serves no useful purpose, and is not in the interest of rational scientific therapy. Furthermore, the proprietary names used for the product are nondescriptive and the preparation itself is unoriginal.—Ed.]

"A NEW DIET FOR PEPTIC ULCER"

To the Editor:—In The Journal, Sept. 20, 1924, was published the work of Dr. Warren Coleman in which he proposes the use of raw white of egg and olive oil or butter fat given separately, as a quite new diet for peptic ulcer.

This diet was proposed by me in an article published in Russian in 1910 (Dietetic Treatment of Ulcer of the Stomach, *Russk. Vrach*, 1910, No. 51, p. 1979), and in German in 1911 (Ueber die diätetische Behandlung von Ulcus ventriculi, *St. Petersburg med. Wchnschr.* 36:13, 1911). I also published an article about this method in 1916 (*Russk. Vrach*, 1916, No.23), as well as a separate volume in 1918 (Treatment of Ulcer of the Stomach, St. Petersburg, 1918) and an article in 1923 (*Vrach. Gaz.*, 1923, Nos. 17-18, p. 386). The diet has since been successfully used in the clinic that I direct and in several other clinics of the Russian universities. The following were published on the same method: work done at the clinic of Professor Kirikof at Saratow (Varypaev, B. P.: Efficiency of Professor Jarotzky's Diet, *Russk. Vrach*, 1915, No. 13); work at the clinic of Prof. P. W. Troitzky at St. Petersburg (Likhatchova, N. P.: *Vrach. Delo*, 1922, Nos. 16-22, p. 492), and work done in the clinic of Prof. P. G. Avramof at Nijni Novgorod (Speranski, M. N.: Physiologic Foundation of the Work of Professor Jarotzky, *Vrach. Gaz.*, 1924). The same method was the object of reports at the meeting of the society of surgeons at Moscow in February, 1924, and at the meeting of therapeutists in 1923 and 1924. The method is widely used among Russian physicians, and is taught in lectures at Russian universities.

This method was elaborated on the basis of work in physiology by Prof. I. P. Pawlow's school (reported in part by Serdiukov, A. S.: Dissertation, St. Petersburg, 1899, p. 29) and from the work of Marbaix (Le passage pylorique, *La cellule* 14:266-268, 1898). These scientists proved that the white of egg has the capacity of passing from the stomach into the bowel without being retained in the stomach, binds the hydrochloric acid, and fosters a minimal secretion of the juice of the stomach. This was tested by another assistant of Pawlow (Khigin, P. P.: Dissertation, St. Petersburg, 1894, p. 95).

In applying this diet, I have recourse to two other auxiliary remedies in order to lessen the secretion of stomach juice: 1. I restrain as much as possible the introduction of water into the organism of the patient either by mouth or through subcutaneous injection or through lavage. 2. I cease to introduce into the body of the patient any quantity of sodium chlorid.

When I first adopted this method in or immediately after some cases of hemorrhage of the stomach, I introduced no food at all by mouth and fed the patient exclusively by way of nutrient enemas. But later I saw that, among these difficult patients, those who were fed by mouth with white of egg and fresh butter felt much better than those who were not fed by mouth. This is the reason why I give to the patient on the first day of clinical treatment the raw white of one egg in the morning and 30 gm. of butter in the afternoon, increasing afterward every day the quantity of butter by 20 gm.; consequently, on the tenth day the patient will take the white of ten eggs, and 180 gm. of butter. He must swallow the white of every egg at once, as one swallows an oyster, without salt.

The main peculiarity of this method is the feeding of the patient with white of eggs and butter separately, at different hours of the day. This is based on the experiments of Pawlow and his followers, who showed that while the raw white of egg is not retained in the stomach and passes through, a mixture of albumins and fats, on the contrary, is retained in the stomach for several hours and provokes abundant secretion of the stomach juice (Dr. Piontkowski).

What have been the results of this treatment for fourteen years?

1. This diet rapidly suppresses the sufferings of the patients. Sufferings such as when the patient cannot endure the contact of a sheet, sufferings that cannot be calmed by the strongest narcotics, cease at once after the diet is applied. This was observed in my clinics as well as in other clinics by Dr. Varypaef, Miss Likhatchof and M. N. Speransky.

2. The lowering of the epigastrium indicates that the walls of the stomach fall down—quite an important fact for the healing of the ulcer. Investigations in my clinic and those of Dr. Likhatchof show that after use of the diet the quantity of free hydrochloric acid in the stomach diminishes.

The diet is so powerful that no medicaments are needed.

The treatment of peptic ulcer during an acute paroxysm of disease is quite simple. The patient must stay in bed; a gradually increasing quantity of white of eggs in the morning and of butter in the afternoon is given to him. He is allowed no other food, drink or medicaments. I do not prescribe this diet to a patient for more than ten days, for it would cause him unnecessary vexation. After ten days of diet the patient may be fed in the morning by a diminished ration of the white of eggs, and in the afternoon by a watery soup with rice, pearl-barley, semolina, etc., and with some butter; butter may also be given separately; afterward a rubbed purée of potatoes and other vegetables (such as carrots and turnips) boiled in water with butter but without salt may be given. Relying on the works of Pawlow and my clinical experience, I forbid during the treatment any use of milk to all patients suffering from peptic ulcer and hyperchlorhydria.

It is to be regretted that the works of Russian investigators are so insufficiently known in America. My attempts to have my work published in English were unsuccessful. My first article was forwarded to England in the autumn of 1917, and for obvious reasons got lost. In spite of many difficulties, in 1922 I forwarded my second work to a British medical journal, but the editor refused to publish it and returned it to me in 1924.

ALEXANDER JAROTZKY, M.D., Moscow, Russia.
Director of Therapeutic (Internal Diseases)
Department, Staro-Iekaterininski Hospital.

[The letter of Dr. Jarotzky was referred to Dr. Coleman, who replies:]

To the Editor:—Thank you for referring Dr. Jarotzky's communication to me. The fact that Professor Jarotzky recommended in *Vrach* in 1910 the use of egg albumin and butter in the treatment of peptic ulcer clearly entitles him to priority in the matter. I did not begin the use of a similar diet until the college year of 1911-1912. It is only necessary to add that I knew nothing of Professor Jarotzky's publications until his letter was sent to me.

WARREN COLEMAN, M.D., New York.

THE DISCOVERY OF THE POLYGRAPH

To the Editor:—In the foreign letter from London (THE JOURNAL, February 14, p. 527), under the caption "Sir James Mackenzie," is found the following: "With the help of a local watchmaker, he devised a new instrument, the polygraph, which in his hands revolutionized our knowledge of cardiac disease, by enabling a complete record to be made for the first time of the action of the heart." It is not my wish in any way to detract from any of the accomplishments of this great cardiologist, but only to keep the records clear and give credit where credit is due. The first polygraph was designed by E. J. Marey; in fact he coined the word polygraph.

The results of the experiments on the graphic determination of the pulse and heartbeat by Marey and Chauveau were first published in an article, "Physiologie médicale de la circulation du sang," Paris, 1863. Marey also made the following contribution on this subject: "Caractères graphiques du battement du coeur dans l'insuffisance des valvules sigmoïdes de l'aorte" (*Arch. de physiol. norm. et path.* 11:61, 1869).

A. E. FOSSIER, M.D., New Orleans.

[COMMENT.—According to the facts available, the first pulse graphs were made by Karl Vierordt in 1855. The sphygmograph was invented by E. J. Marey in 1860. Garrison (Introduction to the History of Medicine) gives credit to Mackenzie for the first polygraphic tracings.—ED.]

"CITROCARBONATE"—A DISCLAIMER

To the Editor:—There is a reference to a paper by Dr. Barach and myself in the advertisements issued by the Upjohn Company. Is there any way that Dr. Barach and I can stop this company from using our names as propaganda? The paragraph reads as though we had recommended "citrocarbonate" for the treatment of pneumonia, but, as a matter of fact, I never heard of "citrocarbonate" until I got this advertisement. I don't think the matter is of vital importance, but it is annoying and I should be glad to have it stopped if there is any easy way of doing so.

JAMES H. MEANS, M.D., Boston.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"ORGAN-O-TONES"

To the Editor:—I am enclosing a card from the Cole Chemical Company for "Organ-O-Tones." I have received about fifty of them. Do you know anything about them, or can you tell me where I can find out about them?

BYRON Y. MILLER, M.D., San Luis Obispo, Calif.

ANSWER.—From the advertising in our files, it appears that the Cole Chemical Company is engaged in the marketing of "shotgun" mixtures, largely of the "pluriglandular" variety. For a year or more it has been "pushing" a mixture "for obesity" designated "Organ-O-Tones No. 19." The preparation is marketed in capsules which have been stated to contain: "Thyroid Substance" ½ gr., "Pituitary (whole)" ¼ gr., "Phytolaccin" ½ gr., "Apocynum (P. E.)" ¼ gr., "Organ-O-Tones No. 12" 3½ grs. The following is the formula for Organ-O-Tones No. 12: "Sodium Bicarbonate" 50 parts, "Potassium bicarbonate" 32 parts, "Calcium Glycero-Phos." 8 parts, "Calcium Phos. (dibasic)" 8 parts, "Magnesium Phosphate" 2 parts.

It is evident from these formulas that Organ-O-Tones No. 19 for Obesity is an irrational mixture which depends for its action as an "obesity" remedy on the thyroid which it contains. The firm's advertising does not stress the formula and hence it is probable that those who use this preparation do so without full appreciation that they are administering thyroid.

More than sixteen years ago, Reid Hunt and Atherton Seidell called attention to the misuse of thyroid as an ingredient of "antifat" nostrums. Since then the ill effects of thyroid as an antifat have become well established.

Recently, H. S. Plummer and W. M. Boothby (THE JOURNAL, Oct. 25, 1924, p. 1333) warned against the uncontrolled use of thyroid in obesity.

WISHART TEST FOR ACETONE

To the Editor:—Where can I find an accurate description for making the Wishart test for acetone in the plasma?

DEJ. C., M.D., Michigan.

ANSWER.—This was referred to Dr. Frederick M. Allen, director of the Physiatric Institute, Morristown, N. J. In reply, Dr. Allen writes: "In behalf of my former assistant Mary B. Wishart, I will say that her test for the plasma was mentioned incidentally in my papers from the Rockefeller Institute and also referred to in my chapter on diabetes in Volume 3 of Nelson's Loose Leaf System of Medicine. It is an application of the Rothera urinary test to the blood. A little plasma (any quantity from 1 c.c. to a few drops) is placed in a small test tube. Enough dry powdered ammonium sulphate is added to supersaturate, so that at the end of the test there will still be some of the solid sulphate in the bottom of the tube. A couple of drops of a fresh solution of sodium nitroprussid are next added and shaken, and finally one or two drops of ordinary ammonia water. On shaking, a purple color develops, a little more slowly than in the case of urine. The intensity of the color is a crude but useful index of the degree of acetonemia.

"This test is valuable clinically because of its simplicity and quickness, and because it is a reasonably trustworthy guide with regard to the severity of the ketosis. Heavy acetone reactions in the urine may be accompanied by very little retention and correspondingly little danger. The plasma bicarbonate may lose its diagnostic significance by reason of heavy alkali dosage. I think I should choose this Wishart test if I were limited to one quick method as the basis of a prognosis in a case of diabetic coma."

TEST FOR DIETHYLPHTHALATE IN DENATURED ALCOHOL

To the Editor:—What is the chemistry of and what are tests for diethylphthalate? I cannot find it in Allen's Commercial Organic Analysis.

R. P., California.

ANSWER.—Diethylphthalate is one of the substances used as a denaturant for alcohol to be used under special permits from the Federal Prohibition Commissioner (pro Mimeograph No. 2840, Sept. 23, 1921). In his "Identification of Pure Organic Compounds," Mulliken (1:84) gives the following directions for detection of phthalic acid:

Mix 0.05 gm. of the powdered acid with an equal quantity of resorcin. Place in a dry test-tube and moisten with one drop of concentrated sulphuric acid. Stand the test-tube in a liquid bath at a temperature of 160 C. and heat for three minutes. Cool, treat the fused mass with 2 c.c. dilute sodium hydroxid solution; pour into 500 c.c. of cold water. The water will show a very intense yellow-green fluorescence due to fluorescein.

Based on this test, J. A. Handy and L. F. Hoyt (*J. Am. Pharm. A.*, November, 1922, p. 928) have developed a modified Mulliken test as follows:

To 10 c.c. of denatured alcohol or to 5 drops diethylphthalate in a small casserole or evaporating dish add 5 c.c. of 10 per cent. sodium hydroxid solution, and evaporate virtually to dryness on the steam bath. Remove the dish from the bath, cool, and cautiously add 2 c.c. sulphuric acid (specific gravity, 1.84), a drop at a time, from a pipet, covering with a watch glass if necessary to avoid spattering. Pour the resulting solution at once into a dry test-tube containing 0.05 gm. of resorcinol, stand the test-tube in an oil-bath heated to 160 C., and maintain at that temperature for three minutes. Remove the test-tube from the bath, allow it to cool, and transfer a small portion of the contents to a large test-tube containing 50 c.c. of water made alkaline with 5 c.c. of 10 per cent. sodium hydroxid solution. The characteristic color of fluorescein develops at once, if the above quantities of denatured alcohol made according to formula 39B or the outer are used. A blank run in precisely the same manner should give a pale amber or straw colored solution free from fluorescein.

GLASS SYRINGES: LOOSENING PISTON FROM BARREL

To the Editor:—I have two solid glass Luer syringes in which the glass pistons have become "stuck" in the barrel. I have immersed in kerosene oil, water, and used heating, but cannot loosen the pistons. Please suggest how I can loosen these pistons.

A. W., M.D., Tyler, Texas.

ANSWER.—The Becton, Dickinson Company, Rutherford, N. Y., suggest that "should the plunger become stuck, it can generally be released by boiling the syringe in an aqueous solution of glycerin, 25 per cent." Another firm, the Kimball-Durand Glass Company of Chicago, suggests to "put a few drops of alcohol or turpentine on the inside after soaking the barrel in warm water." In case of a stuck piston, it is well to know the character of the last material used in the syringe. Materials with an alkaline reaction, such as certain sodium and potassium salts, are quite prone to cause sticking; treatment with acid at times remedies the condition. In laboratory practice, as a last resort there is often employed the drastic method of heating the outer tube, or barrel, in a flame, but not long enough to heat appreciably the inner tube or plunger; then immediately try to "loosen" the surfaces by vigorous tapping with a wooden hammer.

Most important, however, is to clean thoroughly the syringe shortly after using by flushing it with water (warm water is preferred) followed by alcohol; the parts should then be separated and allowed to dry by evaporation.

EUCAIN

To the Editor:—What is eucain and who makes it?

B. C. FEY, M.D., Bell, Calif.

ANSWER.—Originally, two kinds of "eucain" were on the market; namely, "alpha eucain" and "beta eucain." The use of the first product has been generally abandoned. The second product is official in the U. S. Pharmacopeia in the form of hydrochlorid (betaeucain-hydrochlorid), eucain being given as a synonym.

The product may be purchased from drug firms in general.

Betaeucain hydrochlorid is a local anesthetic like cocain, but weaker and devoid of the stimulating properties of the latter. It does not dilate the pupil, nor does it contract the blood vessels as does cocain.

AQUEOUS SOLUTION OF SODIUM IODID

To the Editor:—Will you please tell me the method of preparation of the aqueous solution of sodium iodid that is used for intravenous treatment of syphilis as developed, I believe, by the Mayo Clinic? I desire to prepare some for office use and should like the quantities as well as method of making.

HILTON A. WICK, M.D., New Bethlehem, Pa.

ANSWER.—Information from the Mayo Clinic discloses the fact that at present a 10 per cent. solution of sodium iodid in doses up to 100 c.c. is being used intravenously. The solution is made up fresh every morning by dissolving, in sterile flasks, 100 gm. of sodium iodid, U. S. P., in 1,000 c.c.

of triple distilled water. When thoroughly dissolved, the solution is boiled for ten minutes.

The physicians do not feel that there is any great advantage in using the solution intravenously except in a certain few patients in whom massive doses of iodids by mouth cause an iodism. Likewise, there are some patients who do not tolerate the intravenous use of the drug even after long preparation. The use of sodium iodid intravenously is based on the work of Osborne, as reported in THE JOURNAL, May 21, 1921, p. 334, and Aug. 19, 1922, p. 615. The concentration in the blood and spinal fluid appears to be about the same when given in equivalent amounts either intravenously or by mouth.

BUTYN AND EPINEPHRIN

To the Editor:—1. Can epinephrin be used with butyn in local anesthesia? 2. How does it compare with cocain? ———, M.D.

ANSWER.—1. As a result of animal experiments recently reported by Hirschfelder, Backer and Jennison (*J. Pharmacol. & Exper. Therap.* 26:455 [Jan.] 1925), "the addition of epinephrin to solutions of cocain and saligenin increases their tendency to cause local edema. This is not the case with procain and butyn."

2. According to New and Nonofficial Remedies, 1924, the use of butyn for injection anesthesia or for special anesthesia does not appear promising, since its toxicity is materially greater than that of cocain. Butyn is a substitute for cocain in surface anesthesia as for the eye, nose and throat; it acts through intact mucosa almost as effectively as cocain; solutions of butyn are nonirritant.

THE DICK TEST

To the Editor:—There has been so much controversy recently concerning the materials for the Dick test and scarlet fever immunization that we scarcely know where we're at. The Mulford product is available here now—has it met with your approval and are the Dicks satisfied with it? Will you kindly give me a list of laboratories whose product has been endorsed by the A. M. A. and by the Dicks? A number of our men want to use it for their own families—I do, myself—and have frequent calls for it among their patients. We scarcely know what product to use, or how to recommend the results of any we do use.

R. S. MYERS, M.D., Erie, Pa.

ANSWER.—The U. S. Treasury Department has not authorized the interstate sale of any Dick scarlet fever preparation. The Council on Pharmacy and Chemistry does not accept biologic products until they are licensed by the Treasury Department, and therefore has not considered the Dick scarlet fever preparation. The sale of Dick scarlet fever toxin by the Mulford Company within the state of Pennsylvania cannot be stopped by the government authorities, since the law which governs the licensing of biologic products applies only to the District of Columbia and to interstate commerce.

"LITHONTRIPTIC"

To the Editor:—What is Dr. Samuel H. P. Lee's Lithontriptic, supposed to be used for gallstones and kidney stones? It is made in New York State some place. EDGAR M. ICKES, M.D., Fremont, Ohio.

ANSWER.—We do not know the composition of "Dr. Samuel H. P. Lee's Lithontriptic." Oleson's "Secret Nostrums and Systems of Medicine" (1894) gives, under the title "Lee's Lithontriptic," the following, which purports to be quoted from the *Druggists' Circular:*

Take of	
Powdered castile soap	2 oz.
Carbonate of potassium	4 dr.
Nitrate of potassium	2 dr.
Powdered gum arabic	5 dr.
Oil of juniper	2 fl. dr.
Mix	

There is not known to medical science any substance, which, taken internally, has any effect in dissolving gallstones or kidney stones.

BENZYL BENZOATE FOR HICCUP

To the Editor:—In THE JOURNAL, January 31, page 390, there is an inquiry about the most effective treatment of hiccup. Benzyl benzoate given in full doses, preferably in sweetened milk, is a most dependable remedy, particularly in the epidemic form.

JOHN RUHRÄH, M.D., Baltimore.

Medical Economics

THE SUPPLY OF RURAL PHYSICIANS

Following are additional letters from physicians commenting on the series of articles by Dr. William Allen Pusey, concluded in THE JOURNAL last week:

"Raw Opinions of a Recent Graduate"

To the Editor:—Older men having spoken, you may see fit to print these raw opinions of a recent graduate, himself in country practice. It may be admissible to state that I graduated in 1920, in an A school, next to "high man," at the mature age of 40, having worked my way through. I claim a scientific mind, have always had a reputation for practical application of such knowledge as I acquired, and am probably doing more laboratory work than is done in the rest of the county, which is not much.

Now it seems not unreasonable to assume that such things as have not once been brought to one's remembrance during the first five years out of school will have diminishing likelihood of later resurrection. On this assumption, the medical curriculum, as we were exposed to it, naturally divides itself into three fairly equal parts: (1) the things one really needs in general practice: of which we get all too little; (2) frills injected into the course by myopic highbrows, things doubtless nice to know, especially if we were each destined to research and specialty; and (3) the rest of the course, which both student and prof know to be obsolete and practically worthless, but yet which have to be stressed lest some old fossil spring them on a state board somewhere, and our school be discredited.

Who would knowingly trust their lives in our hands if only they knew the dark truth that we have forgotten all our embryology lying south of the Primitive Streak? Or that we had not spent those requisite hundreds of hours (priceless hours, when we should have been learning medicine) in the laboratory verifying the highly vital findings as to the pharmacology of the useless drugs?

As for country practice, we who are here need not be told how scant the inducement to stay, nor how profuse the provocations to flit, especially if the doctor's family are city bred, have a musical thirst not slaked by the squawk of static, and find no really congenial companionship in the village. But quite different if, as could again be under Dr. Pusey's courageous plan, the doctor were a village lad, and she a country lass. Then they would often prefer staying where the folks are, to fighting homesickness in the city.

Sussex County notwithstanding, I believe Dr. Pusey absolutely right. As I understand, he proposes high school entrance to a four year medical course, which includes interning. Fine! I would even venture the suggestion, then, that instead of the present compulsory intern year (thus abolished as an extra), we substitute a year of compulsory country practice, before giving full license. Some of them would stay on.

All agree it would be nice to have none but polished gentlemen in the profession. But that woman (one summer's hour from here) who last winter lay two days in dystocia and died, without any city doctor being able to get through the drifts to her, likely was less critical of their polish than of their distance.

DON H. DUFFIE, M.D., Central Lake, Mich.

Conditions in Nebraska

To the Editor:—I have found it of great general interest to hear direct from the doctors over the state of Nebraska. They were of all sorts, from the medical educator to the doctor in the sage brush. It was a revelation to me to see how clearly the men in the rural districts are thinking along educational lines. They are the men who are up against the real thing, and they know better than any of us the equipment necessary for a doctor in general practice.

My contention is that such privately endowed schools as Harvard, Johns Hopkins and the University of Chicago should place their requirements as high as they please, but our state

universities are for the sole purpose of preparing the youth for service in the communities of their respective states. It is therefore illogical for the state universities to be held to the same standard as the institutions named above. By so doing, they are simply overshooting the mark and failing to fulfil their mission.

A boy who is a sophomore in the medical department in the State University of Minnesota spent $11,000 in getting an A.B. degree from Princeton, and will spend probably an equal sum before he is through with his medical training.

PALMER FINDLEY, M.D., Omaha.

Advantages of Graduate Study

To the Editor:—In our little town of 10,000 population we have about a dozen physicians, 75 per cent. of them successful. I mean that they are successful in their actual work as well as financially. Not one of them ever went higher than high school in their preliminary studies, but, every one of the successful men spend some time of the year at a post-graduate school or hospital. Then we have our local Academy of Medicine here where we meet once a month, have a dinner and read articles, the same as we do at the Westmoreland County medical meetings.

I graduated at Temple University in 1913. I want to say that I do not know of a graduate from that Class B school who has not been a credit to the profession and who has not done well. Quite a number in my own class did some rather menial work in order to get through. Preliminary education is not the big thing. Yesterday we read a great deal about one of the greatest minds this country ever produced, yet he sadly remarked that twelve months would about cover his schooling.

H. R. MATHER, M.D., Latrobe, Pa.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 3. Sec., Dr. Harry C. De Vighne, Juneau.

ARIZONA: Phoenix, April 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

COLORADO: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, March 10-11. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, March 9. Sec., Homeopathic Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

IDAHO: Boise, April 7. Dir., Mr. Charles Laurenson, Boise.

IOWA: Des Moines, March 18-20. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MAINE: Portland, March 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State Street, Portland.

MASSACHUSETTS: Boston, March 10-12. Sec., Dr. Charles E. Prior, 144 State House, Boston.

MINNESOTA: Minneapolis, April 7. Sec., Dr. Thomas McDavitt, 734 Lowry Bldg., St. Paul.

MONTANA: Helena, April 7. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW HAMPSHIRE: Concord, March 12-13. Sec., Dr. Charles Duncan, Concord.

PORTO RICO: San Juan, March 3. Sec., Dr. D. Biascoechea, Box 804, San Juan.

RHODE ISLAND: Providence, April 2-3. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, April 7. Dir., Mr. J. T. Hammond, State Capitol, Salt Lake City.

Maryland December Examination

Dr. Henry M. Fitzhugh, secretary, Maryland Board of Medical Examiners, reports the written examination held at Baltimore, Dec. 9-12, 1924. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 33 candidates examined, 31 passed and 2 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University		(1924, 3)	79, 81, 82
Johns Hopkins University		(1922, 2)	84, 87, (1923, 2) 81.5, 88, (1924, 3) 87, 87.6, 89
University of Maryland		(1923) (1924, 8)	85 84.6, 85, 85.7, 87, 87.5, 88, 89, 89.6
Tufts College Medical School		(1924)	80
University of Nebraska		(1923)	86
Dartmouth Medical School		(1905)	*
McGill University		(1921) 93.6, (1922) 94, (1923)	89
University of Toronto		(1923)	79
University of Breslau, Germany		(1922)†	80
University of Giessen, Germany		(1922)†	77.5
University of Rostock, Germany		(1921)†	78
University of Moscow, Russia		(1921)†	77.5
University of Geneva, Switzerland		(1921)†	88.5

College	FAILED	Year Grad.	Per Cent.
Loyola University		(1924)‡	73
Imperial University of St. Petersburg, Russia		(1921)†	71

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Loyola University		(1924)	Illinois
University of Michigan Medical School		(1923)	Michigan
Medico-Chirurgical College of Philadelphia		(1903)	Penna.

* No grade given.

† Graduation not verified by A. M. A.

‡ This candidate has completed his medical course, and will receive his M.D. degree on completion of a year's internship in a hospital.

Virginia December Examination

Dr. J. W. Preston, secretary, Virginia Board of Medical Examiners, reports the written examination held at Richmond, Dec. 9-12, 1924. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Thirteen candidates were licensed by reciprocity, and 2 candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University		(1923)	87.5
University of Pennsylvania		(1924)	86
Woman's Medical College of Pennsylvania		(1923)	89.8
Medical College of Virginia		(1901)	79.5
University of Virginia		(1917) 89, (1924, 3) 84.9, 89.6, 91.2	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University		(1913)	Alabama
Bennett Medical College		(1911)	Dist. Colum.
Rush Medical College		(1923)	Illinois
Baltimore Med. College	(1898) North Carolina,	(1912)	W. Virginia
University of Maryland		(1920)	Maryland
University of Michigan		(1898)	Penna.
University of Minnesota		(1919)	Minnesota
Columbia University		(1919)	New York
Jefferson Medical College	(1907) N. Carolina,	(1922)	Penna.
	(1923) West Virginia		
McGill University		(1921)	Maryland

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Georgetown University		(1918)	U. S. Navy
University Medical College of Kansas City		(1899)	U. S. Navy

Kentucky December Examination

Dr. A. T. McCormack, secretary, Kentucky Board of Health, reports the written examination held at Louisville, Dec. 9-11, 1924. The examination covered 11 subjects and included 110 questions. An average of 70 per cent. was required to pass. Four candidates were examined, all of whom passed. One candidate was licensed by a special order of the board. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Kentucky School of Medicine		(1902)	85
University of Louisville		(1924)	84
St. Louis College of Physicians and Surgeons		(1924)	74
University of Vienna, Austria		(1919)*	83

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Kentucky University Medical Department		(1906)	†

* Graduation not verified by A. M. A.

† Licensed by special order of the board.

Vitamin Content of Bread.—Wholemeal bread is a most desirable food because of its higher vitamin and protein value. Tinned foods, margarin, lard, rice and overcooked foods are usually defective as regards vitamin content, and should be excluded as far as economically possible.—Willcox, W. H.: *Practitioner* **114**:3 (Jan.) 1925.

Book Notices

THE CURE OF OBESITY. By Dr. Jean Frumusan. Translated from the French by Elaine A. Wood. Cloth. Price, $2.50. Pp. 124. New York: William Wood & Co., 1924.

Obesity is "a disequilibrium of the assimilation." It is due to hygienic errors, sedentarism and superalimentation. There is no elementary cause, but it is a result of complex predisposing causes. The treatment consists of finding "an efficacious therapeutic in a kind of medicinal synthesis of unerring action . . . to every functional disequilibration, to every pathological depredation, to every hygienic error." This quotation shows the liberality of the verbiage through which the reader has to wander in order to reach the root of the author's ideas. Despite criticisms of other methods of treatment, despite reasoning which is capricious and at times difficult to follow, the treatment of the author does not seem to be startlingly different from other methods now in practice. An exceedingly painstaking study of the case from every possible angle precedes treatment. This evolves an individual economic schedule. Then comes a period of fasting with purgation, alternating with periods of the diet normal for the individual patient. A special, abdominal belt is essential, and physical culture important. The galvanic current and iodized ionization play an important part. Accessories of the treatment are many; organotherapy when properly administered, it is alleged, works miracles. It is really difficult to give a correct assay of the value of this book. Personal reasonings, words and more words obscure the fact that Frumusan is employing a radical but rational method of reducing the weight of the obese. As an illustration, he speaks about disregarding the question of calories, and yet the main feature of his diets is that they are essentially subcaloric. Much that he says is certainly difficult to prove scientifically. Anyhow the book is interesting, and we imagine results might be obtained by his methods.

DIE CHIRURGISCHEN KRANKHEITEN DER NIEREN UND HARNLEITER. Ein Kurzes Lehrbuch. Von Professor Dr. Max Zondek. Paper. Price, 12 gold marks. Pp. 254, with 80 illustrations. Berlin: Julius Springer, 1924.

The author is well known on account of his many important contributions to the surgical anatomy of the kidney. One therefore regrets the paucity of illustrations to aid the reader in understanding how the knowledge obtained through such anatomic studies has been applied to the present-day technic of kidney operations. This is especially true of pyelotomy, which is often the method of choice in the removal of renal calculi; but the text is full of valuable information for the urologist who has not learned to apply the results of recent anatomic studies to his operative technic. The chapters devoted to methods of investigation and to the various diseases are terse but complete. Especially to be commended is the insertion of a number of excellent photographs of kidneys illustrating various pathologic surgical lesions, in preference to drawings. The importance of pyelography as a method of diagnosis is constantly emphasized. The section on ureteral strictures should include reference to recent contributions by our American urologists. Taken as a whole, the book is a welcome addition to urologic literature and reflects on every page the large clinical experience of the author.

THE OPERATING ROOM. A Primer for Pupil Nurses. By Amy Armour Smith, R.N., Superintendent of Nurses at the S. R. Smith Infirmary, and of the Woman's Hospital of the State of New York. Second edition. Cloth. Price, $2.25 net. Pp. 383, with 61 illustrations. Philadelphia: W. B. Saunders Company, 1924.

Miss Smith pictures the stern discipline of the operating room, integrating the duties of each member of the nursing staff, and allowing frequent glimpses of the reward of service. The arrangement and equipment of operating and sterilizing rooms are discussed and the minutiae of asepsis detailed. Directions are given for preparing necessary formulas and for "setting up" for various operations. The book is permeated by a keen sense of the human element in surgical procedures, thus enlivening a subject usually treated in a monotonous series of do's and don'ts. Miss Smith is evidently of the opinion that the federal Harrison Narcotic Act is a law of New York State only, and that inbreeding necessarily weakens a stock. The discussion of the question, "Should nurses administer anesthetics?" is excellent.

PRÉCIS DE DERMATOLOGIE. Par J. Darier, Médecin honoraire de l'Hôpital Saint-Louis. Third edition. Cloth. Price, 50 francs. Pp. 906, with 211 illustrations. Paris: Masson et Cie, 1923.

The third edition of this valuable book is a complete revision of the second edition, and about one third has been entirely rewritten. The clinical descriptions remain much the same, but new ideas and new material have been incorporated in many of the chapters. The chapters on eczema and the tuberculids are particularly interesting, and are good expositions of these disorders from the point of view of the best French school. The chapter on the treatment of syphilis has been entirely rewritten and brought down to date. The arrangement of the book differs so materially from that of every other textbook that, until one becomes accustomed to it, it is somewhat confusing. This is particularly true of the chapters in which the diseases are discussed under the heading of the essential lesions of the skin. This grouping frequently necessitates repetition of the discussion of the disease in several different chapters, thus losing the clarity of sequence. Absence of a bibliography and great reduction in the margins of the page enabled the publishers to create a book that gives the impression of being small, notwithstanding the fact that there are nearly a thousand pages. The former editions were intended for the use of students only; but in the preparation of this edition the author has had the ambition, which he has realized, to make it of value to dermatologists as well.

FUNDAMENTALS OF HUMAN PHYSIOLOGY. By R. G. Pearce, B.A., M.D., and J. J. R. Macleod, M.B., D.Sc., F.R.S., Professor of Physiology in the University of Toronto, Assisted in the third edition by Dr. Norman B. Taylor. Third edition. Cloth. Price, $3.50. Pp. 349, with 71 illustrations. St. Louis: The C. V. Mosby Company, 1924.

This well written elementary textbook is intended to meet the needs of college students, or students in dentistry or pharmacy, for whom the standard treatment of the subject of physiology for medical and graduate students is too extensive. In this edition, several changes have been made, tending to bring the subject matter down to date. An appendix of twenty-four pages contains notes on public and personal hygiene. There is a serviceable index, but no reference to any of the important original literature in physiology. Thus the treatment of the subject, though somewhat more extensive, is essentially the same as found in the usual high school textbooks of physiology. It may be seriously questioned whether the mere extension of the high school type of informational texts is the best ideal for the college.

HANDBUCH DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Heffter, Professor der Pharmakologie an der Universität Berlin. Zweiter Band. 2 Hälfte. Atropingruppe—Nicotin. Coniin. Piperidin. Lupetidin. Cytisin. Lobelin Sparteïn. Gelsemin—Quebrachoalkaloide—Pilocarpin. Physostigmin. Arecolin — Papaveraceenalkaloide — Kakteenalkaloide — Cannabis (Haschisch) — Hydrastisalkaloide — Adrenalin und Adrenalinverwandte Substanzen—Solanin—Mutterkorn—Digitalisgruppe—Phlorhizin—Saponingruppe—Gerbstoffe—Filixgruppe—Bittermittel Cotoin. Aristolochin — Anthrachinonderivate. Chrysarobin. Phenolphthalein — Koloquinten (Colocynthin)—Elaterin Podophyllin. Podophyllotoxin. Convolvulin. Jalapin (Scammonin). Gummi-Gutti. Cambogiasäure. Euphorbium. Lärchenschwamm. Agaricinsäure—Pilzgifte—Ricin. Arbin Crotin —Tierische Gifte—Bakterientoxine. Paper. Price, 87 gold marks. Pp. 1974, with 184 illustrations. Berlin: Julius Springer, 1924.

This is one of those monumental efforts of German scientific endeavor to bring together in one work an exhaustive and critical presentation of all the facts published in an experimental science. The ultimate extent of this series on experimental pharmacology, to be published in three volumes, will be appreciated when one notes the number of pages in this, the second half of the second volume. It includes a discussion of the alkaloids not taken up in the first half of the volume (of 598 pages), as well as of glucosids and

toxic proteins. The work has been in preparation since 1913. Being a collaboration of many authorities in various countries, it was brought to a standstill by the war. The third volume is now in active preparation. For the research worker in pharmacology, the book is indispensable. Though everything of a purely therapeutic nature is excluded, it is quite as important to the investigator in clinical therapeutics.

Medicolegal

Malpractice—Herniotomy—Evidence

(Marbert v. Zeimer et al. (Calif.), 227 Pac. R. 681)

The District Court of Appeal of California, Third District, in reversing a judgment for the plaintiff, says that the complaint was in two counts. The first count charged that the defendants so negligently, carelessly and unskilfuly performed on him an operation for hernia that the inguinal canal was closed so tight that it interfered with and stopped the circulation of the blood and the action of the nerves passing through it; that when the wound healed, the inner walls grew fast to the bowels; and that an incision was made in the right testis. The second count charged, in addition, that, at a later operation, undertaken to relieve the plaintiff, the defendants without his consent and against his expressed wish and will removed the right testis. At the trial, no evidence was offered tending in any substantial way to show that the defendants in performing their surgical operation closed the inguinal canal so tight that it interfered with the action of the nerves or stopped the flow of blood to the plaintiff's right testis, nor to show that the defendants so performed the operation that, when the wound began to heal, the inner walls grew fast to the bowel. Yet these issues were definitely submitted to the jury by the trial court in giving its instructions. The submission of these issues without evidence to support them was error.

An instruction that a physician is responsible for an injury done through the want of proper skill and care of his assistant, if any, was incorrect in requiring of a surgeon "proper" skill and care. All that is required is that he have the degree of skill ordinarily possessed by reputable physicians or surgeons practicing in his locality.

The plaintiff's case was founded on the claim that the operation was negligently performed. This negligence must be made to appear from the evidence in the case. The facts must establish such a condition as would warrant the jury in saying that as a matter of common knowledge the cutting of the cord complained of was an act of negligence, or it must be shown by expert testimony that such cutting resulted from the failure of the defendants to possess and use that degree of care and skill ordinarily possessed and used by physicians and surgeons in good standing practicing in the same locality. Expert evidence is almost universally required in such cases as this. The plaintiff contended that the absence of expert testimony was supplied by evidence of admissions by the defendants. But nothing was added to the plaintiff's case by what at most was an admission by the defendants that in performing the operation for hernia, which they were employed to perform, they had cut and severed the spermatic cord or artery.

What this court wanted to know was whether or not such a mischance is one of the hazards of an operation such as the plaintiff's was, and whether or not, in the exercise of reasonable skill and care such as was ordinarily possessed and exercised by surgeons practicing their profession in the defendants' city and vicinity, such a cutting or severance would ever occur. An asserted admission by one of the defendants that the operation was a "wrong operation," a "misoperation," was not an admission that the operation was carelessly or negligently performed. It was at most an admission that he did not have sufficient skill to perform the operation properly. But it clearly was not an admission that he did not have the degree of skill, care and learning possessed and used by other surgeons practicing their profession in his locality, and that was all the skill and learning he was called on to possess. It amounted to no more than an admission that the operation was not properly done, and that was not sufficient to render him liable. This "wrong operation" may have been deemed right at the time it was performed. If it was so mistakenly performed as the result of a bonafide judgment by a qualified surgeon, he would not be held liable for the unfortunate results of his mistake. As a consequence, while the asserted admissions were competent as evidence of such facts as they admitted, they did not supply the absence of expert testimony in such particulars as expert testimony was otherwise required.

Hearing denied by the Supreme Court of California.

Conviction Under Harrison Law and a Biased Judge Affirmed

(Hobart v. United States (U. S.), 299 Fed. R. 704)

The United States Circuit Court of Appeals, Sixth Circuit, in affirming a judgment of conviction of defendant Hobart, a physician, says that he was convicted of dispensing morphin in violation of the Harrison Narcotic Law. He admitted prescribing large quantities, at frequent intervals, to a known addict. The trial was conducted throughout on the theory that the controlling question was whether he was, in good faith, prescribing the morphin to a patient in an effort to effect a cure, or rather was using the form of prescription as a cover for sales. If the upholding of his conviction depended on the due protection of his rights under this theory during the trial, this court would be compelled to reverse it. The record contained suggestions that the defendant had been before the judge on a former occasion, wherefrom the judge had acquired good reason to believe that the defendant's alleged patient was a pedler, to whom the defendant knowingly thus furnished a stock in trade. Hence it was not surprising that the judge should have felt impatient that the defendant was reluctant to be convicted, and should have regarded his appeal to technical rules as a rather contumacious obstruction of the course of justice; but no amount of such provocation can justify the assumption by a judge of an attitude other than impartial. Throughout the testimony and the charge, the judge's belief that the defendant was acting in bad faith, and that his prescription was a subterfuge, was made so evident that the jury could not fail to be constantly affected by it. This court cannot escape the conviction that a new trial would be necessary, except for the matter to be mentioned.

The case of *U. S.* v. *Behrman*, 258 U. S. 280, 42 Sup. Ct. 303, destroys the theory of the defense on the present trial. Since that decision, there is no possibility that conduct, such as the defendant admitted, could be lawful. The patient was not under restraint. The defendant furnished to him, at frequent intervals and for self-administration, large quantities of morphin, though in quantities diminishing from one time to another; but the patient was at liberty to apply to other physicians and get as many other similar prescriptions as he could. In the case cited, the Supreme Court of the United States declared that this conduct by a physician was ipso facto (by the fact itself) a violation of the law; and it has also said (*Horning* v. *District*, 254 U. S. 135, 41 Sup. Ct. 185) that, where the guilt of the defendant so fully appears that the jury could not rightfully have rendered a verdict of acquittal, the conviction should not be reversed on account of a charge that practically directed the jury what to do.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Cleveland, April 9-11. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

Arizona Medical Association, Bisbee, April 14-18. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

Tennessee State Medical Association, Nashville, April 14-16. Dr. J. F. Gallagher, Jackson Building, Nashville, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

9: 1-150 (Jan.) 1925

*Influence of Diet on Lactation. F. L. Adair, Minneapolis.—p. 1.
*Blood Stream Infection Treated with Mercurochrome-220 Soluble Intravenously. E. B. Piper, Philadelphia.—p. 17.
Unruptured Interstitial Pregnancy, Report of Early Case. J. C. Litzenberg, Minneapolis.—p. 22.
Use of Procain in Obstetrics. M. P. Rucher, Richmond, Va.—p. 35.
Ureteral Stricture in Obstetrics: Multiple Abortions (Renal) and Pyelitis of Pregnancy. G. L. Hunner, Baltimore.—p. 47.
Two Years' Experience with Combination Treatment of Surgery and Radium Rays in Carcinoma Uteri. G. Seeligmann, New York.—p. 66.
Electrocautery in Treatment of Lacerations and Chronic Infectious Diseases of Cervix. H. E. Miller, New Orleans.—p. 73.
*Curettage without Anesthesia on Office Table. H. A. Kelly, Baltimore.—p. 78.
Case of True Hermaphrodism. J. C. Masson, Rochester, Minn.—p. 81.
*Elimination of Eclampsia as Complication of Pregnancy. G. B. Miller, Washington, D. C.—p. 87.
Interstitial Pregnancy; Report of Unruptured Case. W. E. Levy, New Orleans.—p. 93.
*Method for Aspiration of Mucus in Asphyxia Neonatorum. L. A. Bunim, Washington, D. C.—p. 101.
Case of Tubes Dorsalis Complicating Pregnancy. R. N. Hamblen, Spokane, Wash.—p. 102.
Trauma to Undilated But Dilatable Cervix. P. T. Harper, Albany, N. Y.—p. 103.

Influence of Diet on Lactation.—More than 400 cases form the basis of Adair's paper. Outstanding findings were that excess diet had no apparent effect on stimulating milk production. The milk ingestion and weight increase of the infants in the neonatal period would seem to indicate that the milk secretion increased more steadily on rations that contain a liberal amount of protein. The high protein, and balanced diets seemed to meet the needs of the mother and infant, without excessive calory intake, better than either the high fat or high carbohydrate diet. Liberal protein feeding is of definite value in securing the maximum milk supply from nursing mothers.

Mercurochrome-220 Soluble in Blood Stream Infections.—Piper reports his experience with mercurochrome-220 soluble in cases of blood stream infection. He does not believe that this method of treatment is by any means the last word in these conditions, but it is a step in the right direction. Piper stresses the fact that in spite of reports of brilliant recoveries, this is undoubtedly a dangerous procedure and is warranted only by the severity of the condition. Its promiscuous use is to be discouraged, as this will unquestionably bring into definite disrepute whatever merit the treatment may possess.

Curettage Without Anesthesia.—Kelly suggests a technic for a diagnostic curettage without anesthesia for the specialist, which he condemns for the general practitioner lacking special skill and experience. He says that, judiciously used, this procedure will prove a boon to specialists. No accidents have followed it. The work is done in Kelly's examining room in his hospital, where a patient could be sent at once to a bed and detained, if necessary.

Eclampsia.—Miller states that in cases of preeclamptic toxemia indicated by albuminuria, high systolic blood pressure, slight edema, headaches and digestive disturbances, it is the physician's endeavor by rest in bed, milk or markedly restricted diet, colonic irrigations, purgation, etc., to control the toxemia; and in case of failure to do this, promptly to end the pregnancy. To wait for albuminuric retinitis, marked edema, and partial suppression of urine, is rashly jeopardizing the chances of living in the mother without correspondingly improving the prognosis for the child. Women with eclampsia who barely recover have lesions in the liver, kidneys and perhaps the heart and brain which are permanent. These may or may not seriously affect the health of the patient subsequently.

Aspirator to Remove Mucus from Lungs.—Bunim has devised a new aspirator to remove mucus from the lungs of the new-born which can readily be constructed from a breast pump.

American Journal of Public Health, Albany, N. Y.

15: 1-93 (Jan.) 1925

Newspaper Man's Point of View. L. A. White, Detroit.—p. 1.
Sewage Analysis and Its Interpretations. F. W. Mohlman, Chicago.—p. 10.
*Morgan Group of Paratyphoids. M. Levine, G. A. Ajwani and J. C. Weldin, Ames, Iowa.—p. 17.
Effect of Interference in Obstetric Cases. W. F. Seeley, Detroit.—p. 22.
Values in Maintenance of Health of Child. W. H. Brown, Mansfield, Ohio.—p. 28.
Industrial Morbidity Statistics. W. Wright, New York.—p. 31.
Vital Statistics from Point of View of Clinician. E. I. Carr, Lansing, Mich.—p. 35.

Morgan Group of Paratyphoids.—Thirty cultures of Morgan bacilli isolated from cases of infant diarrhea, and one strain from the American Museum of Natural History were studied by Levine, Ajwani and Weldin as to their morphologic, cultural and agglutination characteristics. Three groups could readily be distinguished by cultural and serologic tests, as follows: (*a*) One strain differed from all others in that it failed to attack galactose and did ferment adonitol. It was serologically distinct from all other cultures. (*b*) Two strains were nonmotile, did not produce indol, and further differed from all other cultures in that they produced acid and gas from trehalose and glycerol but not from mannose. Serologically, these strains were identical, but distinct from all other cultures. (*c*) The third group comprises the remaining cultures. Several distinct serologic subgroups could be distinguished by the agglutinin absorption test.

American Review of Tuberculosis, Baltimore

10: 535-697 (Dec.) 1924

*Hemoptysis in Association with Epidemic Colds in Patients with Pulmonary Tuberculosis. J. Walsh, Philadelphia.—p. 535.
*Early Lesions of Intestinal Tuberculosis in Experimental Animals and Man. E. M. Medlar and K. T. Sasano, Mount McGregor, N. Y.—p. 551.
*Experimental Renal Tuberculosis, with Special Reference to Excretory Bacilluria. E. M. Medlar and K. T. Sasano, Mount McGregor, N. Y.—p. 570.
*Study of Presence of Tubercle Bacilli in Bile, and of Tuberculous Lesions of Liver in Experimental Animals. K. T. Sasano and E. M. Medlar, Mount McGregor, N. Y.—p. 592.
*Calcium and Inorganic Phosphorus Content of Blood Serum in Tuberculosis. M. G. Howe and E. M. Medlar, Mount McGregor, N. Y.—p. 608.
*Value of Erythrocyte Sedimentation Determinations in Pulmonary Tuberculosis. W. H. Morrius, Wallingford, Conn.—p. 631.
*Daranyi Flocculation Reaction in Pulmonary Tuberculosis. M. Pinner, Chicago.—p. 641.
*Serum Precipitation Findings in Active Tuberculosis. F. Baum, Denver.—p. 649.
*Local Effect of Alcohol on Experimental Tuberculosis. M. Goldberg and M. B. Lorber, Denver.—p. 654.

Hemoptysis and Epidemic Colds in the Tuberculous.—During the fourteen weeks of the epidemic of cold, lasting from Jan. 1 to April 7, 1923, Walsh saw 204 tuberculosis patients. Of these, fifty-one manifested the cold, forty-six in the form of acute bronchitis, and five in the form of acute coryza. Of the forty-six with bronchitis, seventeen spit blood in association with the bronchitis, and eight later with an exacerbation of the tuberculosis; of the five with coryza, four had blood in the nasal discharge. In the seven weeks previous to January 1, and in the seven weeks succeeding April 7, Walsh saw 220 tuberculosis patients. Of these, thirteen spit blood, or only one third the number that spit blood during the epidemic. A previous study of 321 patients who died of tuberculosis showed that 60 per cent. of them spit blood at some time. The same study showed that the average length of life from the time the diagnosis was made, in other words, from the beginning of evident clinical symptoms till the time of death, was eighty months. Or, putting it another way, in the eighty months preceding death, 60 per cent. of patients spit blood. Comparing the 204 patients of the present series with this 321, one would expect 60 per

cent., or 120 of them, to spit blood in eighty months (348 weeks), or five in fourteen weeks; but since some patients spit blood more than once, one would expect the actual number to be greater than five. The study of all patients seen over fourteen weeks, apart from the epidemic (seven weeks before and seven weeks after) showed that thirteen (6 per cent.) spit blood under these ordinary circumstances, while thirty-seven (18 per cent.), or about three times the number, spit blood during the epidemic.

Early Lesions of Intestinal Tuberculosis.—The early tuberculous lesions of the intestine in the human being and guinea-pig are described by Medlar and Sasano. These appear identical in their mode of development. If tuberculous peritonitis is ruled out, tuberculosis of the mesenteric lymph nodes means that there are or have been tuberculous lesions in the intestine. Caseation is not a necessary factor in the production of ulceration. No evidence of bacillary emboli was found. There is no evidence that tubercle bacilli are "swept through" the intestinal mucosa during the process of normal digestion. There is evidence that an inflammatory exudate exists in the lumina of the intestinal glands in the large majority of early tuberculous lesions. It seems reasonable that this is a precursor to the finding of bacilli in the submucosa and later in the mesenteric lymph nodes. Evidence is presented that tuberculous lesions exist in the intestine when there is no gross manifestation of the lesions. Intestinal tuberculosis is common in guinea-pigs having generalized miliary tuberculosis. Tuberculous ulcers may occur in the guinea-pig, but they are rare. Hepatic tuberculosis acts as a "feeder" for intestinal tuberculosis in the guinea-pig.

Experimental Renal Tuberculosis.—The ability of the kidney to excrete tubercle bacilli was made the subject of study by Medlar and Sasano. Rabbits and guinea-pigs were used. No evidence to support the excretion of tubercle bacilli from a normal kidney was found. Renal tuberculosis in the guinea-pig occurred in 66 per cent. of the animals. Bilateral renal tuberculosis occurred in 88 per cent. The effect of these bacilli on the kidney tissue was also studied. Cortical tuberculosis apparently is the most common type, but medullary lesions are the most destructive to the kidney tissue. The size of the tuberculous lesion is no criterion as to the number of bacilli present. Negative findings in the urine do not rule out renal tuberculosis. Hematogenous infection is the rule. It was present in every case in this series. Usually there are multiple foci. The tuberculous lesions in the guinea-pig kidney are of three types: (1) cortical, (2) pyramidocortical, and (3) pyramidal. There is a striking resemblance between the tuberculous lesions in the guinea-pig and in the human kidney. Individual tuberculous lesions of the kidney may heal.

Bacilli in Bile in Experimental Tuberculosis.—The experiments done by Sasano and Medlar show that the bile does not constantly contain tubercle bacilli, even when there is considerable tuberculosis present in the body. It is possible that in those cases in which the liver is involved, the collection of the entire bile output of twenty-four hours or longer might show tubercle bacilli present. From a study of serial sections of the tuberculous liver, in the stage in which enlargement was not apparent and in which gross diagnosis was not possible, it would appear that a far more logical explanation of the presence of tubercle bacilli in the bile would be that there is present in the liver a caseous tubercle or an infarct, which leads to necrosis of the bile duct epithelium and thus an opening for the tubercle bacillus into the biliary system. In other words, lesion and necrosis in the liver must necessarily precede the appearance of tubercle bacilli in the bile. If tubercle bacilli are present in bile obtained by the Lyon-Meltzer technic, it must be concluded that they were either ingested or that there is an ulcerative tuberculous lesion in the liver. If the latter is true, tuberculosis of the liver is much more common in the human case than at present suspected.

Calcium and Phosphorus in Blood in Tuberculosis.—Observations were made by Howe and Medlar on patients undergoing alpine lamp treatment, but no evidence was obtained of an abnormal metabolism of calcium or phosphorus. Nor was there any evidence that ultraviolet rays have any effect on the calcium or phosphorus content of the blood, granted their concentration is within normal limits before treatment.

Value of Erythrocyte Sedimentation in Tuberculosis.—One hundred and fifty patients have been tested by Morriss using Westergren's method, including twelve far advanced, eighty-eight moderately advanced, twenty minimal, and ten patients in whom a diagnosis of no clinical tuberculosis was made. The blood of twenty-one normal men and women was also examined to determine a normal standard. A definite increase in the velocity of erythrocyte sedimentation was found in cases of active pulmonary tuberculosis. However, no constant relationship can be shown between the rate of sedimentation and the extent of pulmonary lesion, though rapid sedimentation will be found to occur in a far larger percentage of patients with extensive lesion than in those with slight lesion. The test seems to offer a valuable estimation of the degree of activity. Patients with definite symptoms of activity, fever and rapid pulse always give a rapid sedimentation, while those patients who are judged to be quiescent usually give readings within normal limits, though to the latter statement there are not infrequent exceptions, especially in women. The test has little value in the diagnosis of tuberculosis.

Durany Test in Pulmonary Tuberculosis.—The Durahyi test was applied by Pinner to 534 patients. The test appears to be of little diagnostic value in tuberculosis, but is a sensitive indicator for alterations in the colloidal stability of the serum in disease conditions, and it gives valuable information as to the severity of the destructive process. It was negative in 10.9 per cent. of undoubtedly active cases. More important, it was negative in 26.8 per cent. of incipient active cases. Of eighteen incipient cases with positive sputum findings, two gave a negative test. In the group of far advanced cases there were 7.6 per cent. of negative reactions. Most of the negative tests in far advanced cases are found in moribund patients. In four cases of exudative pleurisy, without any apparent lung involvement, Pinner found two 4 plus, one 3 plus and one 1 plus reaction, a rather significant finding, as exudative pleurisy is an acute and active manifestation of tuberculosis.

Serum Precipitation Findings in Active Tuberculosis.—Baum describes a simple rapid method for determining the colloid instability of the blood of tuberculous animals and human beings. Of 233 human beings studied, 162 had active clinical symptoms of tuberculosis, forty-nine were suspiciously tuberculous, two had pertussis, one had a pulmonary (nontuberculous) tumor, one had nephritis, and five were normal pregnant women. All exudative, ulcerative (cavity), miliary and caseous pneumonic cases gave a strongly positive reaction. Fibroid cases gave a moderately positive reaction. Early cases, hilum tuberculosis and a few nontuberculous cases gave a faintly positive reaction. Baum states that his serodiagnostic alcohol-sodium chlorid precipitation test is not specific for tuberculosis, since a positive test may be obtained in other diseases and abnormal conditions; but in conjunction with acurate clinical data it is an easily performed adjunct to present methods of examination for tuberculosis, and especially for the presence of activity in tuberculous subjects. Its value seems to be in the differential diagnosis of doubtful cases of tuberculosis, in addition to determining the state of activity in tuberculosis.

Local Effect of Alcohol on Experimental Tuberculosis.—Goldberg and Lorber state that ethyl alcohol, in concentration (30 per cent.) not capable of producing profound local tissue changes on injection around a local intracutaneous site of infection with virulent human tubercle bacilli, has no appreciable effect on the development of the local tuberculous lesion, the local lymph node involvement or the systemic disease. Likewise, compresses of 70 per cent. ethyl alcohol, locally applied to an intracutaneous site of infection with tubercle bacilli in guinea-pigs, has no influence on the tuberculosis developing subsequently. Concentrations of ethyl alcohol as low as 20 per cent. in physiologic sodium chlorid solution have a detrimental influence on virulent human

tubercle bacilli when the bacilli are suspended therein for two hours at incubator temperature, while 10 per cent. alcohol is without effect.

Arkansas Medical Society Journal, Little Rock

21: 153-174 (Jan.) 1925

Can Pulaski County Medical Society Pay Better Dividends? H. A. Higgins, Little Rock.—p. 153.
Insulin in Treatment of Diabetes. A. A. Blair, Fort Smith.—p. 155.
Simplified Diabetic Management. A. A. Gilbert, Fayetteville.—p. 162.

Boston Medical and Surgical Journal

192: 151-196 (Jan. 22) 1925

Difficulties in Distinguishing Between Urinary Stones and Calcified Abdominal Glands. A. L. Chute, Boston.—p. 151.
*Urethral Prolapse in Women—Indication of Bladder Disease. A. L. Chute, Boston.—p. 162.
*Glycosuria of Pregnancy. J. T. Williams, Boston.—p. 163.
Stanford Street Dispensary. J. W. Farley, Boston.—p. 165.
Thomas Sydenham, Our Model Practical Physician. R. Fitz, Boston.—p. 171.

Urethral Prolapse in Women Sign of Bladder Disease.—In the three cases reported by Chute, a little prolapse of the urethra, due to bladder irritation and the consequent straining on urination, was mistaken by the physicians in charge for a caruncle, and removed on the assumption that it was the cause of the patients' symptoms, rather than the result. The real cause of the symptoms in these cases was malignant disease of the bladder.

Glycosuria of Pregnancy.—Williams found sugar in the urine of 13.6 per cent. of 500 pregnant women at some time during pregnancy. It was found more commonly in primigravidas than in multigravidas. In primigravidas, its incidence seemed to increase with the age of the patients. In multigravidas, no difference was observed. It was found more commonly during the second half of pregnancy. The sugar found in the urine during pregnancy is always glucose and not lactose. Lactose, however, is present in the urine of a considerable proportion of nursing women during the period of breast engorgement. Williams points out that the ordinary glycosuria of pregnancy is physiologic only, and disappears after delivery. The glycosuria of pregnancy is a renal glycosuria not being accompanied by any increase in blood sugar. The physiologic glycosuria of pregnancy must be differentiated from diabetes, with which it has no connection. This can be done by determination of the blood sugar and by follow-up work. The physiologic glycosuria of pregnancy is the result of the normal hypertrophy of the posterior lobe of the pituitary body during pregnancy. Increased activity of the posterior pituitary lobe causes glycosuria during pregnancy just as it does when due to pathologic causes (tumors, etc.). After delivery, as the pituitary involutes, the glycosuria disappears.

California and Western Medicine, San Francisco

23: 33-128 (Jan.) 1925

Practical Suggestions Regarding Testimony of Medical Experts. P. Burks, Los Angeles.—p. 33.
*Coronary Occlusion and Myocardial Degenerations. W. J. Kerr, S. V. Larbey and A. E. Larsen, San Francisco.—p. 46.
Foreign Bodies in Respiratory and Upper Digestive Tracts. S. Jesberg, Los Angeles.—p. 52.
*Treatment of Flexion Deformity of Hip Joint. S. F. Stewart, Los Angeles.—p. 59.
Rational Conduct of Labor. H. S. Fist, Los Angeles.—p. 61.
*Case of Pyloric Stenosis. A. Weeks and L. Brooks, San Francisco.—p. 65.

Coronary Occlusion and Myocardial Degenerations.—This study is based on fifteen cases. No outstanding etiologic factors were noted. Eleven of the fifteen cases were in persons after the fourth decade. Of those under 40 years of age, two showed subacute bacterial endocarditis, which probably was responsible for infarction by embolism. In two patients, only 32 and 38 years of age, respectively, no etiologic factors could be ascertained. Both showed very extensive generalized arteriosclerosis. All fifteen patients were men. Heredity did not seem to play a rôle. In only one case was there a definite family history of heart disease. Infectious diseases were rarely observed in the previous histories. In four cases there was a history of rheumatism. Two of these showed subacute bacterial endocarditis with probably embolism of the coronary arteries with myocardial changes. In the other two, no evidence of valvular heart disease was found at necropsy, although in one case pericardial adhesions were observed. A history of syphilis, twenty-nine years before death, was obtained in one case, and a positive blood Wassermann was also recorded. Necropsy showed fibrosis of the interventricular septum and aneurysm of the left ventricular wall. In another case a weekly positive Wassermann was obtained, and necropsy showed a syphilitic aortitis in addition to a chronic fibrosis of the myocardium, and mural thrombosis of the apexes of both ventricles. The symptoms are confusing unless the underlying pathologic changes are understood. Any woman past 50 who, with or without previous history of cardiac symptoms, presents a history of severe, agonizing, persisting pain in the chest or upper abdomen, accompanied by dyspnea, unrelieved by rest, should be considered probably a sufferer from coronary disease. The surgeon should be particularly on his guard in such patients with upper abdominal symptoms and signs. Extreme pallor and prostration, feeble pulse and heart action, low blood pressure, enlargement of the heart, passive congestion at the bases of the lungs, enlargement of the liver, slight fever and leukocytosis confirm the diagnosis. Such findings of murmurs, irregularities, embolic phenomena may help to locate the site of the process in the heart. The roentgen-ray examination may show a heart of unusual size or shape.

Treatment of Flexion Deformity of Hip.—In a partially paralyzed person suffering from a flexion contraction of the thigh, Stewart says an attempt should be made to preserve as much muscle power as possible for future use. To this end, in cases in which the tensor fasciae remains active, it should not be divided transversely as in the operation of Soutter, but should be lengthened in its tendinous portion, and the transplantation of the lesser gluteals after the manner of Campbell should be held as a reserve measure.

Operation for Pyloric Stenosis in Prematurely Born Infant.—The case reported by Weeks and Brooks is unusual, in that the child developed the disease, was operated on and had recovered before the time it normally should have been born. The boy was born two months before term. The usual Fredet operation was performed.

Canadian Medical Association Journal, Montreal

15: 1-122 (Jan.) 1925

*Cause of Dyspnea. J. Meakins, Montreal.—p. 2.
Applicability of Urologic Methods of Diagnosis and Treatment to Infants and Children. F. S. Patch, Montreal.—p. 8.
Lupus Erythematosus: Treatment by Radium. H. Mackay, Winnipeg.—p. 14.
Treatment of Chronic Heart Failure. R. D. Rudolf, Toronto.—p. 17.
Recent Advances in Knowledge of Scarlet Fever. W. R. Hodge, Toronto.—p. 21.
*Pernicious Anemia. B. S. Cornell, Toronto.—p. 26.
*Cause of Matutinal Alkaline Tide of Urine. E. M. Watson, London.—p. 32.
Autotransfusion. L. H. Appleby, Vancouver.—p. 36.
*Hypernephroma Associated with Thyroid Hyperactivity: Case. J. Kaufmann and M. F. Cashin, Montreal.—p. 37.
Pyelitis in Infancy and Childhood. V. B. Dowler, Fort William.—p. 41.
Comments on Gastro-Intestinal Roentgen-Ray Reports. W. M. Carrick, Hamilton.—p. 45.
Tryparsamide Therapy in Neurosyphilis. C. M. Crawford, Whitby.—p. 46.
*Prevention and After-Care of Acquired Heart Disease in Children. H. P. Wright, Montreal.—p. 55.
*Case of Tetany Treated with Parathyroid Extract. B. Collip and D. B. Leitch, Edmonton.—p. 59.
Diabetes with Tuberculosis: Case. J. H. Mullin, Hamilton.—p. 61.
Multiple Neurofibromas: One Fibroma Enlarging into Stomach. E. Shouldice, Toronto.—p. 66.
Gangrene of Lower Extremities Complicating Scarlet Fever. G. E. Learmonth, Calgary.—p. 69.
Muscular Dystrophy. P. C. Leslie.—p. 71.
Intestinal Obstruction Due to Meckel's Diverticulum and Accompanied by Diffuse Peritonitis. H. S. Dolan, Montreal.—p. 73.

Cause of Dyspnea.—Meakins reviews the mechanism of respiration and its disturbances by chemical and anatomic defects. He says that in order properly to estimate the value of dyspnea as a symptom for diagnosis and prognosis, not to mention the indication for treatment to prevent further damage from occurring, it is necessary to understand the methods of its production.

Etiology of Pernicious Anemia.—The hypothesis advanced by Cornell is that pernicious anemia may be the bodily reaction to *B. welchii* toxin. In three cases coming to necropsy, *B. welchii* has been found during life, in two cases in the spleen, and not found anywhere in the third case. In two cases during life, *B. welchii* was isolated from pyorrheal pus (the only two cases culturally examined to date). Authorities are fairly agreed that pernicious anemia is caused by a toxin, and many investigations favor also the idea of an infection, the two conceptions not being necessarily incompatible. But it should be emphasized that if an infection causes this disease, it must be an infection of a special kind, different from most known chronic infections. It would probably be an infection by an organism producing a moderately powerful, soluble poison, with neurotoxic, as well as hemotoxic, properties. The necropsy findings show no type of tissue reaction such as might be produced by any familiar, chronic infective agent. There are no abscesses, no granulomas, no fibrous condensations. Just as *B. tetani*, from an insignificant focus, sends forth a soluble neurotoxic and hemotoxic substance to cause destructive changes at great distances, so in pernicious anemia, the infection may possibly conform to this type. *B. welchii*, the only micro-organism ever seriously designated is, like *B. tetani*, an anaerobe, with an extoxic poison. Cornell's experiments prove that *B. welchii* can produce a chronic infection and strongly suggest, as well, that its poison has a neurotoxic element.

Matitudinal Alkaline Tide of Urine.—Watson is of the opinion that the essentially "morning" alkaline tide appears to be more closely related to respiratory than to digestive phenomena.

Hypernephroma Associated with Hyperthyroidism.—Kaufmann and Cashin cite the case of a man who on four admissions directed attention to hematuria, which lasted from the time of onset to death, a period of six and a half months. There was a marked hypertension, beginning slowly and rising rapidly, and persisting right through to the end. The basal metabolism was markedly increased in the last two months, which, with anxiety, nervousness, tachycardia and tremor, gave a typical clinical picture of toxic goiter. The patient did not respond to iodin or digitalis therapy. Following the nephrectomy, the patient's reaction was one of rapidly progressive aggravation of symptoms of thyroid toxicity, and of cardiac embarrassment with resulting decompensation and death. A mass on the right side, rapidly increasing in the latter weeks of the disease, was considered a similar involvement of the other kidney, associated, perhaps, with a secondary nodule in the liver. As the hypernephroma extended, the thyroid, already unbalanced by an adenoma, became suddenly toxic. Death occurred from thyroid hyperactivity and hypernephroma, the toxicity of the one progressing proportionally to the destruction of the other.

Rheumatic Complex in Children.—Wright proposes a new term for a certain group of symptoms seen in children. The term is "rheumatic complex," or "rheumatic syndrome," or "rheumatic-chorea syndrome," or "rheumatic-chorea complex," and under some such heading Wright places the following: (1) frequent sore throat; (2) so-called "growing pains," myositis; (3) chorea; (4) arthritis, including stiff neck; (5) endocarditis; (6) subcutaneous nodules, and (7) erythema nodosum.

Tetany Treated with Parathyroid Extract.—A highly potent extract of the parathyroid glands of the ox, obtained by Collip and Leitch, is believed by them to represent the essential parathyroid hormone. It has been found to be a specific for tetany in parathyroidectomized dogs. It has been shown to produce its beneficial effect through an elevation of the level of blood calcium. It is to be expected, therefore, that this parathyroid extract will be of use in those clinical cases in which blood calcium is known to be subnormal. One such condition is infantile tetany. A case in point is reported in which the hypodermic administration of this parathyroid extract effected a cure. The authors suggest the name parathyrin for this substance.

Colorado Medicine, Denver

22:1-44 (Jan.) 1925

Modern Diabetic Treatment. E. P. Joslin, Boston.—p. 6.
Impropriety of Certain Procedures in Care of Diabetics; Plea for Maintenance of Approximate Normal Blood Sugar in Diabetics. R. T. Love, Denver.—p. 13.
*Results Obtained with Tryparsamide in Group of Fifty Cases of Neurosyphilis. C. S. Bleumel and W. M. Greig, Denver.—p. 16.
Case of Lupus Vulgaris. E. D. Downing and F. A. Forney, Woodman. —p. 19.
*Cesarean Section in Eclampsia. C. B. Ingraham, Denver.—p. 21.
Dangers of Commercial Lye. C. H. Darrow, Denver.—p. 27.
Differential Diagnosis and Systemic Functional Disturbance of Nephroptosis. O. S. Fowler, Denver.—p. 29.
Pulmonary Tuberculosis in Children. S. W. Schaefer, Colorado Springs. —p. 35.

Tryparsamide in Neurosyphilis.—Fifty patients with general paralysis, tabes and other forms of neurosyphilis were given sixteen injections of tryparsaminde at weekly intervals by Bleumel and Greig. Sixteen patients improved; sixteen showed no material change; nine were worse, and nine died during treatment. Four suffered visual impairment amounting virtually to blindness.

Cesarean Section in Eclampsia.—Ingraham states that during the last few years, in Denver, about 42 per cent. of the women with eclampsia have been delivered by cesarean section, with a mortality of 37.9 per cent.

Georgia Medical Association Journal, Atlanta

24:1-44 (Jan.) 1925

My Ideals for Medical Association of Georgia. J. O. Elrod, Forsyth. —p. 1.
Definite Program for 1925. F. C. Warnshuis, Grand Rapids, Mich.—p. 4.
State-Wide Health Association. C. H. Richardson, Jr., Macon.—p. 7.
Program of State Board of Health. J. P. Bourdeau, Adairsville.—p. 10.
Tips for Cash-Store Specialist. E. S. Osborne, Savannah.—p. 14.
Omental Grafts as Means of Relief After Liberating Extensive Adhesions in Abdomen. E. C. Davis, Atlanta.—p. 16.
Heart Block with Recovery. G. Buehmann and W. W. Daniel, Atlanta. —p. 18.
Diagnosis and Treatment of Nonseasonal Hay-Fever. H. M. Davison, Atlanta.—p. 21.
Insufficient Treatment of Syphilis and Its Relation to Neurosyphilis. H. D. Allen, Jr., Milledgeville.—p. 25.

Illinois Medical Journal, Oak Park

47:1-80 (Jan.) 1925

Pneumococcus Eruptions of Skin. F. C. Knowles, Philadelphia.—p. 31.
Most Recent Advances in Surgery of Trigeminal Neuralgia Major. W. T. Coughlin, St. Louis.—p. 25.
Shoulder Fractures. F. J. Cotton, Boston.—p. 28.
Complete Resection of Thyroid. O. M. Walker, Chicago.—p. 31.
Remarkable Regression of Cicatrix. G. T. Palmer, Springfield.—p. 32.
Case of Glanders in Human. G. A. Silver, Jr., Litchfield.—p. 34.
Singer's Voice. H. E. Taylor, Chicago.—p. 34.
Rupture of Uterus in Cesareanized Women. G. H. Weber, Peoria. —p. 39.
Early Diagnosis and Treatment of Tuberculosis of Joints. P. Lewin, Chicago.—p. 41.
Craniocerebral Injuries. P. E. Greenleaf, Bloomington.—p. 46.
Incipient Cataract. J. W. Sanders, Decatur.—p. 50.
Eclampsia with Cerebral Hemorrhage in Puerperium. L. C. Knight, Carthage.—p. 53.
Juvenile Thyroid. H. C. Blankmeyer, Springfield.—p. 55.
Public Health Service. W. F. Draper, Washington, D. C.—p. 59.
Public Health in Relation to County Board of Supervisors. J. B. Liston, Carlinville.—p. 62.
Where Law and Medicine Meet. J. R. Brown, Alton.—p. 65.
Bronchitis of Unusual Type. W. E. Shastid, Pittsfield.—p. 67.
Preserving Sphincter in Treatment of Fistula in Ano. C. J. Druech, Chicago.—p. 69.

Journal of Experimental Medicine, Baltimore

41:1-177 (Jan. 1) 1925

Factors Concerned in Polycythemia Produced by Subcutaneous Injection of Epinephrin. C. W. Edmunds and E. E. Nelson, Ann Arbor, Mich. —p. 1.
Serologic Relationships Among and Between Streptococci and Pneumococci. C. H. Hitchcock, St. Louis.—p. 13.
Encephalitozoon Cuniculi as Kidney Parasite in Rabbit. T. Smith and L. Florence, Princeton, N. J.—p. 25.
Respiratory Response to Carbon Dioxid. H. W. Davies, G. R. Brow and C. A. L. Binger, New York.—p. 37.
*Significance of Anaphylaxis in Pneumococcus Immunity. G. M. MacKenzie, New York.—p. 53.
Production and Significance of Cutaneous Allergy to Pneumococcus Protein. G. M. MacKenzie and S. T. Woo, New York.—p. 65.
Bacteriophage of D'Herelle. I. Is Lytic Principle Volatile? J. J. Bronfenbrenner and C. Kurb, New York.—p. 75.

Hydropic Stages in Intestinal Epithelium of New-Born Calves. T. Smith, Princeton, N. J.—p. 81.
Bacteriology of Intestinal Tract of Young Calves; Early Diarrhea ("Scours"). T. Smith and M. L. Orcutt, Princeton, N. J.—p. 81.
*Experimental High Intestinal Obstruction in Monkey. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 107.
*Distribution of Chlorids in Blood of Dog After Experimental Intestinal Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 113.
Cultivation of Active Agent of Mosaic Disease in Tobacco and Tomato Plants. P. K. Olitsky, New York.—p. 129.
*Calcium and Phosphorus Metabolism in Osteomalacia. L. M. Miles and C. Feng, Peking, China.—p. 137.
Nature of Bacterial Allergies. H. Zinsser and J. H. Mueller, Boston.—p. 159.

Significance of Anaphylaxis in Pneumococcus Immunity.—MacKenzie asserts that intraperitoneal injections of killed and living broth cultures of a virulent pneumococcus produce in guinea-pigs a high degree of active immunity and a serum with strong protective power. Despite the protective power of such serum, no agglutinins for the homologous organism and no precipitins for soluble derivatives were demonstrable. Guinea-pig immunity to pneumococcus infection, produced by the method described, is not attended by cutaneous allergy to derivatives of the pneumococcus used for immunization. During the course of an artificially produced active immunity, anaphylaxis may at times be present and at times absent without any measurable effect on the resistance of the animal to infection by intraperitoneal injection. In the particular instance studied, the experiments indicate that anaphylaxis to pneumococcus protein has no important effect on the resistance of the animal to infection. It appears to be a concomitant without any significant rôle in the immunity mechanism.

Experimental High Intestinal Obstruction.—The blood findings in five monkeys after experimental high intestinal obstruction are reported by Haden and Orr. All animals showed the marked rise in nonprotein nitrogen characteristic of intestinal obstruction in man and in the dog. Two monkeys showed a very marked drop in chlorids, the others a less marked fall. Coincident with the change in chlorids, there is a rise in the carbon dioxid combining power. The uric acid and creatinin showed no typical changes. No vomiting was observed. This emphasizes the fact that vomiting alone does not account for the fall in blood chlorids characteristic of intestinal obstruction.

Distribution of Chlorids in Experimental Intestinal Obstruction.—The results of simultaneous chlorid determinations in whole blood, in plasma, and in cells of the dog after experimental intestinal obstruction are presented by Haden and Orr, and the chlorid content of whole blood and of plasma is compared by two methods of estimation: the iodometric titration on protein-free filtrate, and the digestion technic of Van Slyke. The chlorid as determined on protein-free filtrate checks closely with that as determined by the digestion procedure. The iodometric determination shows accurately the level of chlorids in the blood. The total change in the chlorid store of the body is best reflected in determinations on whole blood. In intestinal obstruction, the retained chlorid is not present in the blood in some undetermined form.

Calcium and Phosphorus Metabolism in Osteomalacia.—Ten patients with osteomalacia were studied by Miles and Feng, whose conclusions are that osteomalacia is a diet deficiency disease of the same category as rickets. The deficiency is principally in the fat-soluble vitamin content of the diet, though there may be a calcium deficiency at the same time. The disease may be prevented by providing a diet rich in the fat-soluble vitamin content, and may be cured by adding the same to the diet.

Kentucky Medical Journal, Bowling Green

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Surgery in Goiter. L. W. Frank, Louisville.—p. 3.
Intracranial Hemorrhage of New-Born. J. H. Pritchett, Louisville.—p. 7.
Teeth as Foci of Infection and Irritation. L. K. Baldauf and A. P. Williams, Louisville.—p. 12.
Foreign Bodies Perforating Intestinal Tract: Case. E. S. Allen, Louisville.—p. 18.
Femoral Fracture: Two Cases. J. D. Trawick, Louisville.—p. 20.
Insulin Treatment of Diabetes Mellitus. R. H. Davis, Louisville.—p. 22.
Juvenile Nasopharyngeal Fibroma Treated with Radium. D. Y. Keith and J. P. Keith, Louisville.—p. 26.
Shock. H. C. Clark, Falmouth.—p. 29.
Influenza. J. T. Reddick, Paducah.—p. 31.
Early Symptoms of General Paresis. W. R. Summers, Hopkinsville.—p. 33.
Various Types of Endocarditis. W. T. Gerding, Newport.—p. 35.
Pericarditis. H. C. Chance, Cumberland Gap, Tenn.—p. 38.
Arteriosclerosis. O. P. Nuchols, Pineville.—p. 40.
Albuminuric Retinitis. J. P. Edmonds, Middlesboro.—p. 42.
Treatment of Epilepsy. W. G. Kinsolving, Eddyville.—p. 43.
Atypical Pneumonia. E. L. Palmore, Hiseville.—p. 45.
Lymphosarcoma of Tonsil: Case. S. G. Dabney, Louisville.—p. 47.
Multiple Urinary Calculi. I. Abell, Louisville.—p. 49.

Medical Journal and Record, New York

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American Surgery and Surgery of World. W. van Hook, Chicago.—p. 69.
Focal and General Infections. J. O. Bower, Philadelphia.—p. 70.
Familial Myopathy. A. A. Robinson, San Francisco.—p. 76.
Surgery in Nephritics. D. H. Bessesen, Minneapolis.—p. 81.
New Ways for Research Work on Tuberculosis. W. Forset, Sarrebruck, Germany.—p. 82.
Schulte-Tigges Method of Staining Tubercle Bacilli. A. H. Werner, New York.—p. 84.
Shoeing. Z. B. Adams, Boston.—p. 85.
Adenosarcoma of Right Tonsil Cured by Radium Emanation Seeds. I. Glassman, New York.—p. 86.
Galvanic and Faradic Electricity and Derived Currents in General Practice. F. T. Woodbury, New York.—p. 87.
Autoserum Treatment of Chorea. J. Diner, New York.—p. 91.
Multiple Gastric Ulcers. E. S. Judd and O. S. Proctor, Rochester, Minn.—p. 93.
Pyloric Stenosis and Pylorospasm. A. J. Scott, Jr., Los Angeles.—p. 96.
Perforated, Intrathoracic, Hourglass Stomach (Eventration). J. R. Verbrycke, Jr., Washington, D. C.—p. 99.
Phase of Hernia Too Little Emphasized. C. E. Haines, New Rochelle, N. Y.—p. 101.
Hypopancreorrhea (Hypopancrehea). A. Bassler, New York.—p. 102.
Oblique Transrectus Incision for Operations on Gallbladder and Extrahepatic Bile Passages. A. O. Wilensky, New York.—p. 105.

Michigan State Medical Journal, Grand Rapids

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Contributions of Chemistry to Art and Science of Medicine. H. B. Lewis, Ann Arbor.—p. 1.
Lead Poisoning. D. Donald, Detroit.—p. 7.
Diabetes and Its Modern Treatment. J. L. Chester, Detroit.—p. 10.
Diet (Jarotzky) for Peptic Ulcer. A. Altschuler, Detroit.—p. 17.
Physiology of Quartz Light. J. P. Parsons, Ann Arbor.—p. 19.
Irremovable Foreign Bodies in Eye. G. Slocum, Ann Arbor.—p. 22.
Treatment of Cancer of Colon. W. E. Sistrunk, Rochester, Minn.—p. 28.
Etiology and Prevention of So-Called Catheter Cystitis. H. Cabot and J. L. Loomis, Ann Arbor.—p. 32.
Oxygen Therapy and Medication in Treatment of Pneumonia in Infancy and Childhood. R. S. Rowland, Detroit.—p. 38.
Sinusitis: Reason for Apparent Failure Following Removal of Tonsils and Adenoids in Children. R. A. Barlow, Madison, Wis.—p. 43.

Missouri State Medical Association Journal, St. Louis

22:1-46 (Jan.) 1925

Value of Endoscopy to Internist. B. J. McMahon, St. Louis.—p. 1.
Pellagra: Case. E. C. Robichaux, Excelsior Springs.—p. 6.
Acute Surgical Abdomen. C. E. Hyndman, St. Louis.—p. 10.
Streptococcic Laryngitis Simulating Clinical Diphtheria. O. J. Dixon, Kansas City.—p. 14.
Treatment of Skin Cancer by Electrocoagulation in Conjunction with Quartz Light Therapy. R. C. Lounsberry, Springfield.—p. 15.

Military Surgeon, Washington, D. C.

56:1-128 (Jan.) 1925

Practical Value of Examination of Food Handlers to Army. A. L. Parsons.—p. 35.

Nebraska State Medical Journal, Norfolk

10:1-36 (Jan.) 1925

Diseases of Heart. A. D. Dunn, Omaha.—p. 1.
Perineal Prostatectomy Under Sacral Anesthesia. E. Davis, Omaha.—p. 20.
Gastric and Duodenal Ulcer, Symptoms and Treatment. A. C. Stokes, Omaha.
Gastric and Duodenal Ulcer. W. A. Gerrie, Omaha.—p. 23.
Transposition of Stomach: Case. J. Buis, Pender.—p. 26.
Case of Enlarged Thymus. H. O'Donnell, Springview.—p. 27.

New Jersey Medical Society Journal, Orange

22:1-32 (Jan.) 1925

Arteriosclerosis. J. E. Howard, Haddonfield.—p. 9.
Middle Ear Infection. C. J. Keeler, Philadelphia.—p. 13.
Inguinal Hernia. H. Klaus, West Hoboken.—p. 17.

New York State Journal of Medicine, New York

25:1-48 (Jan. 15) 1925

Gram-Positive Anaerobes in Appendicitis and Its Complications. J. E. Jennings, Brooklyn.—p. 1.
Conclusive Toxemia of Pregnancy and Its Treatment. R. McPherron, New York City.—p. 6.
Etiology and Treatment of Tonsillar Hemorrhage. G. H. Cox, Glen Cove.—p. 11.
*Simple Auscultatory Method of Physical Diagnosis. R. Burton-Opitz, New York City.—p. 18.
Case of Infectious Jaundice. E. S. McDowell, Plattsburg, N. Y.—p. 19.

Auscultatory Method of Physical Diagnosis.—Burton-Opitz places the bell of the stethophone over the sternum at the second interspace. By means of a blunt colored pencil, short vertical strokes are then made from without inward, beginning about 3 inches to the right of the sternum. As the pencil is moved inward, a line will eventually be reached when the sound suddenly increases in its intensity. This point is marked with the pencil. The stethophone is then lowered about an inch each time and this process repeated, until the entire right border of the heart has been charted in this manner. The stethophone is now raised to its former level at the second intercostal space, while stroking movements are made with the pencil beginning at a point 3 inches to the left of the sternum. The point at which a sudden increase in the intensity of the sound is noted is again marked. The stethophone is then moved downward and this process repeated. At about the fourth rib the stethophone is shifted toward the left so that it comes to lie over the main mass of the ventricles. Sweeping oblique strokes are then made, beginning about 4 inches above the bell of the stethophone. This process is repeated in successive radial lines until the entire left border of the heart has been outlined. The lower border of the heart is ascertained by placing the stethophone over the ventricles 2 inches to the left of the sternum, and by making short horizontal strokes from below upward, beginning at a point about 3 inches below the bell.

Northwest Medicine, Seattle

24:1-50 (Jan.) 1925

Future of Ophthalmology. F. A. Kiehle, Portland, Ore.—p. 1.
Retrobulbar Neuritis. J. H. Parsons, London.—p. 4.
Glaucoma and Focal Infections. H. G. Thomas, Oakland, Calif.—p. 8.
Demonstration of Visual Field Apparatus. T. C. Lyster, Los Angeles.—p. 10.
*Case of Orbital Hemangioma Treated with Radium. A. C. Jones, Boise, Idaho.—p. 11.
Photographing Human Fundus. W. O. Bell, Seattle.—p. 13.
Influence of High Blood Pressure in Cataract Surgery. F. E. Burch, St. Paul.—p. 16.
Suturing Conjunctiva in Cataract Operation. H. V. Würdemann, Seattle.—p. 22.
Study of Eustachian Tube: Preservation of Its Function in Ventilation of Middle Ear. F. E. Brown, Salem, Ore.—p. 25.
Analysis and Correction of Hearing Defects. V. O. Knudsen and I. H. Jones, Los Angeles.—p. 29.
Mastoid Surgery. C. F. Welty, San Francisco.—p. 32.
Significance of Bacteremia Following Mastoid Operations. J. H. Harter, Seattle.—p. 35.

Radium Therapy for Orbital Hemangioma.—Jones reports a case of cavernous hemangioma of the orbit, not involving adjacent structures, which was successfully treated with radium. The patient was 6 years of age. He was first seen in May, 1923. Since then there has been a steady improvement in the vision and recession of the tumor, until now it is impossible to detect any difference of the two eyes and appendages. There is binocular vision. This is said to be the first case of cavernous hemangioma of the orbit treated with radium.

Radiology, St. Paul

4:1-82 (Jan.) 1925

Present Studies in Experimental Cancer. M. J. Sittenfield, New York.—p. 1.
Fundamental Harmony Shown in All Essentials in Spontaneous Neoplasms and in True Experimental Tumors. M. Slye, Chicago.—p. 7.
Quantitative Factors in Susceptibility of Living Cells to External Agents. C. M. Child, Chicago.—p. 21.
Technical Aids in Roentgenologic Demonstration of Lesions High in Stomach and on Posterior Wall. R. D. Carman, Rochester, Minn.—p. 33.
Radioactive Substances: Therapeutic Uses and Applications. J. Muir, New York.—p. 40.
Right-Sided Diverticulitis and Diverticulosis. L. T. LeWald, New York.—p. 43.
Roentgenologic Findings in Case of Phytobezoars. W. O. Upson, Battle Creek, Mich.—p. 49.

Rhode Island Medical Journal, Providence

8:1-18 (Jan.) 1925

Diagnosis of Diseases of Bladder, Ureter and Kidney. Cases. V. J. Odde, Providence.—p. 1.
Medical Aspects of Peptic Ulcer. G. S. Mathews, Providence.—p. 7.

Southwestern Medicine, Phoenix, Ariz.

9:1-44 (Jan.) 1925

Mechanical Problems in Advanced Pulmonary Tuberculosis. O. Egbert, El Paso.—p. 1.
Heliotherapy in Tuberculosis. S. H. Watson, Tucson.—p. 4.
Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. J. W. Flinn, Prescott, Ariz., W. E. McWhirt and J. H. Allen, Whipple Barracks, Ariz.—p. 9.
Tuberculosis of Eye; Its Relation to General Medicine. H. H. Stark, El Paso.—p. 14.
Nasal Tuberculosis. S. A. Schuster, El Paso.—p. 17.

U. S. Naval Medical Bulletin, Washington, D. C.

23:1-117 (Jan.) 1925

Renal Pathology in Pluriglandular Disorders. H. M. Stenhouse.—p. 1.
Pyelitis. A. R. Cecil.—p. 13.
Physiology of Gallbladder in Connection with Conditions Requiring Surgical Relief. J. A. Biello.—p. 19.
Study of Prisoners at Naval Prison, Portsmouth, N. H. A. W. Stearns.—p. 26.
Rectum and Diseases of Genito-Urinary Tract. L. H. Williams.—p. 32.
Inexpensive Decoration of Mess Halls at U. S. Naval Hospital, Great Lakes, Ill. B. W. Claggett.—p. 35.
Streptococcus Septicemia. J. E. Miller.—p. 37.
Treatment of Gonorrheal Ophthalmia by Injections of Milk. J. T. Hooker.—p. 40.
Thrombo-Angiitis Obliterans. G. C. Main.—p. 43.
Occlusion of Left Common Carotid Artery. Case. A. L. Aldrich.—p. 48.

Virginia Medical Monthly, Richmond

51:595-666 (Jan.) 1925

Endocrinology: Relation to Internal Medicine. W. P. Porter, Roanoke.—p. 595.
Id. Relation to General Surgery. P. W. Boyd, Winchester.—p. 599.
Id. Relation to Pediatrics. W. L. Morris, Norfolk.—p. 601.
Id. Relation to Gynecology. S. H. Watts, University.—p. 602.
Id. Relation to Radiology. D. D. Talley, Richmond.—p. 608.
Id. Relation to Neurology and Psychiatry. J. J. Glover, Radford.—p. 612.
Id. Relation to Therapeutics. L. E. Stubbs, Newport News.—p. 614.
Menopause and Climacteric. J. N. Upshur, Richmond.—p. 620.
Septic Cases Treated with Mercuric Chlorid Intravenously. R. B. Jones, Danville.—p. 625.
Incidence of Diseases of Lower Air Passages Secondary to Infections in Upper Respiratory Tract. T. D. Davis, Richmond.—p. 627.
Myocardial Disease and Surgical Conditions of Abdomen. J. M. Hutcheson, Richmond.—p. 630.
Treatment of Hypospadias: Twenty-Eight Cases. C. Y. Bidgood, Richmond.—p. 634.
Anatomic Characters of Mongolian Imbecile. R. B. Bean, University.—p. 642.
Roentgen Rays in Urology. J. W. Hunter, Norfolk.—p. 644.
Radical Surgery of Maxillary Sinus: Twenty-Six Postoperative Cases. Special Reference to Dental Injury. E. T. Gatewood, Richmond.—p. 647.
Blocking Puerperal Sepsis. S. Harrenberger, Warrenton.—p. 651.

West Virginia Medical Journal, Huntington

20:1-56 (Jan.) 1925

Borderlines in General Medicine. C. A. Ray, Charleston.—p. 1.
Relation of Clinical to Laboratory Work. C. E. Gabel, Charleston.—p. 7.
Spanemphilia. J. T. Thurston, Wheeling.—p. 11.
Liver Function. W. R. Laird, Jr., and L. H. Landon, Montgomery.—p. 18.
Treatment of Hip Fractures. J. M. Salmon, Ashland, Ky.—p. 22.
Carcinoma of Lip. C. J. Brosman, Cincinnati.—p. 27.
Tuberculosis. G. D. Lind.—p. 31.

Wisconsin Medical Journal, Milwaukee

23:417-476 (Jan.) 1925

Significant Lines of Progress in Medicine in Last Quarter Century. A. S. Loevenhart, Madison.—p. 418.
Giving Flowers to Hospitals Brings Pleasure to W. G. McKay. F. L. Holmes, Madison.—p. 427.
Telling Doctor Troubles Relieves You and Aids Him to Effect Early Recovery. V. E. Eastman, Wausau.—p. 429.
In War "Unfit for Service"; In Peace "Handicaps to Success." O. Lotz, Milwaukee.—p. 431.

Malignant Smallpox Visits Neighboring States: Individual Protection by Vaccination Means Community Safeguard. H. M. Guilford, Madison. —p. 435.
How Wisconsin Has Reduced Death Toll from Communicable Diseases. L. W. Bridgman, Madison.—p. 437.
June 30, 1925, will be "Judgment Day" for Wisconsin Communities; Twenty-Two Already Entered. E. N. Hein, Madison.—p. 441.
Wisconsin Physicians Pioneers in Battle Against Tuberculosis; Winning Fight. H. H. Jacobs.—p. 443.
Health Hazards in Small Cities and Villages Can Be Decreased by Community Pride. A. V. deNeveu, Rhinelander.—p. 447.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

28: 415-639 (Dec.) 1924

Polymorphin Trypanosomes of T. Brucei Group Recovered from Mouse in Sleeping Sickness Area. H. L. Duke.—p. 475.
Experimental Study of Trypanosomiasis in Palestine. I. J. Kligler and I. Weltsman.—p. 437.
Tetrarhynchid Parasites from Ceylon Marine Fishes. T. Southwell.—p. 459.
Preferential and Compulsory Breeding Places of Aedes (Stegomyia) and Their Limits. H. R. Carter.—p. 493.
Two New Spontaneous of Reptilian Cestodes. O. Fuhrmann.—p. 505.
Collection of Linguatulids in Liverpool School of Tropical Medicine. T. Southwell.—p. 515.
African Cercicopsoinous Species of Genus Porcilpelyis. A. Ingram and J. W. S. Macfie.—p. 533.
*Changes in Blood in Primary Malaria. R. M. Gordon.—p. 595.
Nematodes in Museum of Liverpool School of Tropical Medicine. E. L. Taylor.—p. 601.

Changes in Blood in Primary Malaria.—Observations were made by Gordon on three patients suffering from general paralysis of the insane, all of whom were undergoing treatment by a first attack of malaria, induced as the result of the bites of anophelines infected with *Plasmodium vivax*. In these cases, therefore, it was possible to observe the blood changes that occurred in a patient suffering from an undoubted primary attack of malaria, the date of acquirement of which was known. In one case there was a marked diminution in the number of red cells for several days previous to the first appearance of parasites and the same was true, though in a less marked degree, of one other case. In at least one patient, the red cell count continued to fall after the disappearance of parasites from the peripheral circulation. The parasites, after reaching a maximum concentration, on or about the fifth day after their first appearance, tended to diminish in numbers; this diminution was slower than the previous increase and took place whether quinin was given or not; it was clearly observable in all three cases, but most marked in two cases in which the maximum concentration was in each case reached somewhere between fourteen and twenty thousand parasites to the cubic millimeter. In two cases in which the color index was estimated, it was found to be of the simple anemia type.

British Journal of Experimental Pathology, London

5: 305-363 (Dec.) 1924

Effect of Radiation on Production of Specific Antibodies. P. Hartley. —p. 306.
Edema in South African Cattle. A. D. Stammers.—p. 313.
Effects of Light on Leukocytes and Blood Vessels in Mesentery of Living Animal. A. Campbell and L. Hill.—p. 317.
*Distribution of Insulin in Human and Other Animal Tissues; Micro-method for Estimation of Insulin in Tissues. S. L. Baker, F. Dickens and E. C. Dodds.—p. 327.
*Reaction of Skin to Vaccinia Virus. J. C. G. Ledingham.—p. 332.
Modifications in Preparation of Neutral Red Light Green Double Stain; Improved Method of Embedding Tissues in Paraffin. F. W. Twort. —p. 350.
*Demonstration of Hitherto Undescribed Type of Cell in Glands of Stomach. F. W. Twort.—p. 352.
Automatic Pifler. T. H. Ayling.—p. 354.
Hemolysin and Hemagglutinin with Reference to Wassermann Reaction. C. C. Obell and H. J. Parish.—p. 355.

Insulin in Potatoes and Onions.—Active material, indistinguishable from insulin, was prepared by Baker, Dickens and Dodds from potatoes and onions.

Reaction of Skin to Vaccinia Virus.—The vaccinal lesion has been studied histologically by Ledingham in its various manifestations following cutaneous, intradermal, subcutaneous, intravenous, intraperitoneal and intrasplenic inoculation, and both naked-eye and histological data have been controlled by inoculations of virus mixed with viricidal serum. The lesion is essentially of the order of an acute infective granuloma in which the reticulo-endothelial system is primarily and dominantly involved. There is no evidence that vaccinial virus possesses an elective affinity for epiblastic tissue. The lesions of vaccinia and of molluscum in the hen are histologically of the same order in so far as the dermal response is concerned. Evidence is afforded that precisely similar tissue responses occur when the virus is introduced into tissues remote from epiblast, such as the subcutis, the peritoneum and the spleen. In contradistinction to vaccinia, anti-epidermal serum when introduced intradermally produced an early and definite toxic action on epiblastic elements of skin.

New Type of Cell in Stomach Glands.—Twort describes some small cells with a large round or slightly oval nucleus which usually stain less densely with neutral red-light green than the nucleus of the peptic or oxyntic cell. The protocells are crowded with similar staining granules, which may be tipped with a fine point of red coloration. The cells in shape and size most closely resemble the peptic cells. They usually occur singly and are wedged in between the peptic cells, or more rarely are situated between the peptic and oxyntic cells. They are most numerous in the deeper part of the glands. The grass green coloration taken on by these cells is quite distinct from the bluish green granules, and the delicately staining large round nucleus give them a characteristic appearance which is distinct from all other cells present. It is probable that these cells have some special function to perform in connection with digestion. The cell has not been found in Brunner's glands or in any other part of the body so far examined.

British Medical Journal, London

2: 57-96 (Jan. 10) 1925

Heart and Aorta Strain and "Lying Down Heart." E. M. Brockbank. —p. 57.
*New Outlook on Cancer: Irritation and Infection. J. Young.—p. 60.
*Diagnosis and Prognosis in Chronic Renal Disease. E. G. B. Calvert.—p. 64.
Relative Loss of Heat and Weight in New-Born; Treatment of Shock. A. L. McIlroy.—p. 67.
Epidemic Encephalitis Simulating Acute Surgical Lesions of Abdomen. G. H. Stevenson.—p. 68.
*Spontaneous Rupture of Thoracic Aorta. C. C. Maitland.—p. 69.
Aneurysm of Branch of Renal Artery. G. B. Richardson.—p. 70.
Barley Itch. A. G. G. Thompson.—p. 71.
Tuberculous Disease of Sternum. E. W. Johnson.—p. 71.
*Cervical Ribs in Children. C. D. Agassis and K. A. H. Sykes.—p. 72.
*Congenital Familial Jaundice. T. R. Thomson.—p. 72.

Exciting Cause of Cancer.—An organism with a complex life story has been obtained almost constantly by Young from cancer. It possesses yeast, coccal, bacillary and amorphous phases, and each of these can grow true to type and live a wholly independent life. The parasite lives in symbiosis with the cancer cell in the amorphous phase, and it is from this that all the other phases are derived during incubation of a cancerous growth. The discovery of this phase, it is asserted, provides the key to the cancer phenomena, as also the key to the morphologic variants. The morphologic features of this parasite resemble the life story described by many writers for other classes of pathogenic organisms. The parasite belongs to familiar bacteria that are widespread in nature; and the ease with which cancer can be induced experimentally in animals by chronic irritation suggests that tissue susceptibility, wherever found, implies the immediate risk of infection by a ubiquitous organism. The free and universal exposure of man and animals to infection, combined with the (relatively) small proportion of the total that develop cancer, Young takes it, suggests the all-importance of cell susceptibility, and corresponds to the laboratory difficulties attendant on an attempt to produce cancer experimentally by the injection of the organism.

Function of Kidney in Chronic Nephritis.—Special attention is directed by Calvert to putting forward the plea that

in estimating the function of the kidneys note should be taken not only of the degree to which concentration of waste products in the urine can occur, but also of the capacity of the kidney to produce a dilute urine. It is shown that the power to concentrate urea is best determined over the night hours after a provocative dose of urea, and that the value of the result obtained is much enhanced by ascertaining the greatest extent to which water diuresis, most effective during the waking hours, can lower the concentration of urea. The minimum concentration provides a basis from which to judge the maximum, and, vice versa, an expression of range of function or reserve power. The part played by the heart's action and blood pressure in determining these results is discussed. Special importance is attached to the following in the diagnosis and prognosis of chronic renal disease: history of the case; general condition of the patient; state of the heart, blood vessels and blood pressure (systolic and diastolic) as an estimate of cardiovascular efficiency; condition of the retinas and disks; general examination of the urine; range of urea concentration test, and estimation of the blood urea and, perhaps, also the inorganic phosphorus in the plasma.

Spontaneous Rupture of Thoracic Aorta.—Maitland reports a case of spontaneous rupture of the thoracic aorta as a sequel to an operation for gangrene of the leg. The history of the case points to the gangrene having been due to syphilitic endarteritis obliterans rather than to any embolic blocking. The most remarkable feature was that the patient was able to carry on a normal active business life and to survive successfully two general anesthetics up to within such a short time of his death, with an advanced degree of degeneration present in his main arterial channel.

Cervical Ribs in Children.—Agassiz and Sykes report two cases occurring in children, aged 4 and 14 years, respectively. They were discovered accidentally, because in neither case did the extra ribs give rise to symptoms.

Congenital Familial Jaundice.—In the group of cases reported by Thomson, three children out of a family of six suffered from jaundice and survived to lead a healthy life. The mother of these children had had jaundice for the first ten days of her life, and her mother had jaundice at the same time. In each of the children the jaundice lasted only ten days.

Journal of Hygiene, London

23: 241-346 (Dec.) 1924

*Study of C. Diphtheriae and Other Members of Genus Corynebacterium: Fermentative Activity. M. M. Barratt.—p. 241.
*Relation of Tubercle Bacillus to Lymphadenoma. C. C. Twort.—p. 260.
*Two Cases of Melioidosis. A. T. Stanton, W. Fletcher and K. Kanagarayer.—p. 268.
Certified Milk in Relation to Bacteriologic Standard. A. T. R. Mattick and R. S. Williams.—p. 277.
*Malaria in Rural Settlements in Palestine. I. Incidence and Etiology. I. J. Kligler.—p. 290.
*Parasite and Spleen Rates in Malaria in Palestine. I. J. Kligler, J. M. Shapiro and I. Weitzman.—p. 291.
Treatment of Malaria. J. M. Shapiro and I. J. Kligler.—p. 296.
*Breeding Places and Types of Anopheles. I. J. Kligler.—p. 298.
Malaria Control Demonstrations. I. J. Kligler and J. M. Shapiro.—p. 307.
Stimulants to Bacterial Variation. A. Eastwood.—p. 317.

Fermentation Activity of Diphtheria Bacillus.—The fermentation reactions and some ancillary characters of 102 strains of virulent *Cornybacterium diphtheriae*, thirty-one nonvirulent strains and 150 diphtheroids have been studied by Barratt. With the possible exception of dextrin, which proved to be an unsuitable substance for biologic tests, all the strains of virulent *C. diphtheriae* examined were found to have constant biochemical reactions, fermenting glucose, maltose and galactose and having no action on sucrose, lactose and mannite. By the use of three carbohydrates, glucose and sucrose, 90 per cent. of the diphtheroids in this series could be distinguished from *C. diphtheriae* by their fermentation reactions. In the remaining 10 per cent., a clue as to the nature of the organism is often obtained from the character of the growth on agar. Among the corynebacteria examined, other than *C. diphtheriae*, no constant relationship was found between the source and the biochemical, morphologic and other characters.

Relation of Tubercle Bacillus to Lymphadenoma.—The evidence at present available in support of the view that lymphadenoma is a special manifestation of tuberculous disease, in Twort's opinion, is not conclusvie. Lymphadenoma glands may often be infected with tubercle bacilli, but possibly not more often than they are infected with streptococci or diphtheroids.

Melioidosis.—Two cases of fatal melioidosis are described by Stanton, Fletcher and Kanagarayer. Melioidosis is "a glanders-like disease occurring in Rangoon" caused by *B. whitmori*. One of the cases reported is the only instance of the disease that has been recognized in a European.

Malaria in Palestine.—Statistical and laboratory data are presented by Kligler which bear on the incidence and epidemiology of malaria in rural Palestine. These data indicate that the annual incidence of malaria ranged between 50 and 100 per cent., and that in the areas, in which no control was effected in 1922, it was always considerably higher than the minimum figure. They also show that malaria is both endemic and epidemic, and that there are two epidemic periods, one in the summer and one in the fall of the year. In the winter and spring there is little or no primary malaria. The parasites most frequently encountered are *Plasmodium vivax* and *P. falciparum; P. malariae* is uncommon. *P. vivax* is found throughout the year, but is the cause of about 98 per cent. of the total malaria cases in February to June and only from 50 to 60 per cent. during October to December.

Parasite and Spleen Rates in Malaria in Palestine.—More than 5 per cent. of the rural Jewish and more than 15 per cent. of the rural Arabic population examined by Kligler, Shapiro and Weitzman actually carried parasites in their blood. Among the Jews, the parasite rate in the Galilee settlements was a little below (from 4 to 5 per cent.), in Judea and Samaria a little above (from 6 to 7 per cent.) and in the valley of Esdraelon more than double the average for the entire population. Among the Arabs, the only notable exceptions that fell below the average were the village Hartuf and the Arabs living in the Jewish colony Yavniel; all the other villages gave a parasite incidence of from 15 to 25 per cent. The blood and spleen rates taken by themselves indicate a high prevalence of malaria, but they are not a satisfactory indicator of the relative prevalence of malaria in adjacent communities, living under different conditions, and having different standards of life.

Anopheles in Palestine.—The main sources of anopheline mosquitos, and the habits of the species more or less commonly found in Palestine are described by Kligler. It is shown how the peculiar topography of the country, the limestone hills, the seasonal rainfall and the sand dunes lead to the formation of characteristic breeding places. Depending on the character of the breeding place, one or all of the three common house-visiting anopheles are widely distributed throughout rural Palestine. Two of these mosquitoes, *A. clutus* and *A. superpictus*, have thus far been found infected in nature, and the former has also been infected experimentally with *Plasmodium falciparum*, as well as *P. vivax*.

Journal of Laryngology and Otology, Edinburgh

40: 1-71 (Jan.) 1925

Ecchondrosis of Larynx: Two Cases Successfully Treated by Laryngofissure. C. Thomson.—p. 1.
Cartilaginous Tumors of Larynx. I. Moore.—p. 9.
Tortuosity of Internal Carotid in Relation to Pharynx. A. B. Kelly.—p. 15.
Almond and Peanut in Bronchus: Two Cases. R. P. Mathers.—p. 24.
Chondroma of Cricoid Cartilage of Larynx. E. B. Waggett.—p. 27.

Journal of State Medicine, London

33: 1-50 (Jan.) 1925

Cause of Reduction of Infantile Mortality in Recent Years. W. G. Willoughby.—p. 2.
Care of Mentally Defective Child. R. Langdon-Down.—p. 9.
Training and Assistance of Blind. E. B. B. Towse.—p. 17.
Child Welfare in Coalfield. M. S. Share-Jones.—p. 21.
Mothercraft. V. Erleigh.—p. 27.
District Nursing in England. M. Egerton.—p. 32.
Physical Training of Adolescent Girls. C. Chisholm.—p. 37.

Archives des Maladies de l'Appareil Digestif, Paris

14: 869-972 (Dec.) 1924

*Enterococcus Vaccine Treatment. E. Thiercelin.—p. 869.
*Research on Glycuronuria. Destrée and Van Dooren.—p. 898.

Enterococcus Vaccine Treatment.—Thiercelin obtained surprising results from enterococcus vaccine not only in cases with this coccus as the causal factor, but also in digestive affections caused by other bacilli. The vaccine has been used also in postsurgical infectious complications, especially after an operation on the digestive tract. The results, he says, were remarkable. The dose of the vaccine, administered by mouth, is 10 c.c. a day for an infant in the first months of life; 20 c.c. from 6 months to 4 years; 40 c.c. for a child over 4 years. The usual dose for an adult is 30 c.c. twice a day. These doses may be increased since the vaccine is absolutely harmless. The enterovaccine is made from a number of strains.

Glycuronic Acid Test of Liver Function.—Destrée and Van Dooren say that their method for the naphthoresorcin test determines the qualitative elimination of glycuronic acid in the urine as an index of liver functioning. Testing of 400 specimens showed that the identical terminal tint could be obtained in all by reducing the contact of naphthoresorcin with the glycuronic acid. Appearance of colorless ether is not a reliable sign of the absence of glycuronic acid. The test tint resists boiling for ninety minutes with glycuronic acid from a normal liver, and forty minutes in disease of the liver. They give a detailed description of the method.

Bulletins de la Société Médicale des Hôpitaux, Paris

60: 1-37 (Jan. 6) 1925

Case of Buerger's Thrombo-Angiitis. Ravina and Longchampt.—p. 9.
Congenital Abscess of Scrotum. A. Lévi and Linossier.—p. 12.
Staircase Form of Arrhythmia. G. N. Martinez.—p. 17.
*Ethyl and Sodium Cod-Liver Oil Preparations. Caussade et al.—p. 28.
Derivatives of Chaulmoogra and Cod-Liver Oil in Tuberculosis. Pernet et al.—p. 32.

Action of Cod Liver Oil Derivatives on the Lung.—Caussade, Tardieu and Grigaut compare the pulmonary lesions in rabbits and dogs produced by intravenous injection of cod liver oil treated with sodium, or an ethyl derivative (sodium morrhuate and ethyl morrhuate). While generalized necrosis of the tissues was induced by the sodium preparation, only a localized thrombosis with slight hemorrhage was caused by a large dose of the ethyl preparation. A large dose of the latter, injected by way of the trachea, did not produce any lesions. The different action may be due to the chemical nature of the drugs, as sodium morrhuate is a soap, and ethyl morrhuate an ester.

Comptes Rendus de la Société de Biologie, Paris

92: 1-48 (Jan. 16) 1925. Partial Index

*Avian Diphtheria. L. Panisset and J. Verge.—p. 7.
*Experimental Conjunctivitis in Rabbits. G. Blanc and J. Caminopetros.—p. 10.
Experimental Tuberculosis in Phasmidae Insects. Toumanoff.—p. 14.
Cultivation of the Pneumococcus. M. Abuff.—p. 16.
*Formation of Lipoids in Animals. Grigaut and Yovanovitch.—p. 17.
*Protein in Raw and Boiled Milk. N. L. Cosmovici.—p. 20.
*Amnion and Fetal Deformity. J. Tur.—p. 21.
*Creatinin in Blood of Children. Lesné et al.—p. 23.
Arteries of Brain. C. Foix and P. Hillemand.—p. 31.
Arteries of Medulla Oblongata. Foix et al.—p. 33.
Arteries of the Pons. C. Foix and P. Hillemand.—p. 35.
Law of Growth in Infants. R. Lamboley.—p. 39.
*Insulin and Pancreatic Juice. M. Lambert and H. Hermann.—p. 43.

Avian Diphtheria and the Schick Reaction in Fowls.—Sixteen fowls were immunized by Panisset and Verge with human diphtheria toxin. They had a negative Schick reaction, but they developed grave avian diphtheria when inoculated with the filtrable virus a few days later. Other cocks, recovered from avian diphtheria, but giving a positive Schick reaction, and thus receptive to human diphtheria, did not present any signs of reinfection after a second inoculation with avian diphtheria. Evidently avian diphtheria is not identical with human diphtheria.

Experimental Tuberculous Conjunctivitis in Rabbits.—Blanc and Caminopetros induced in rabbits a tuberculous conjunctivitis by subconjunctival injections of tuberculous products (cerebrospinal fluid, urine, pus, pleural exudate) in which the specific bacillus had not been detected microscopically. The experiment may have a diagnostic value, since the reaction is constant, rapid and typical.

Formation of Fats and Lipoids in Animals.—Grigaut and Yovanovitch's research on dogs proved that fats and lipoids originate in all living cells. Referring to Roger and Binet's work, they affirm that the destruction of lipoids in the lungs, and the formation of lipoids in the cells correspond to the stages of oxidation and of reduction in the blood. Combustion of the fatty substances occurs during oxidation, while they are generated during reduction.

Protein in Whey.—Cosmovici confirms that lactoglobulin and lactalbumin disappear from the whey of boiled milk, as they become enclosed in the curds during coagulation. Consequently, the curds of boiled milk contain casein, lactoglobulin and lactalbumin, while the curds of raw milk contain only casein.

Formation of Amnion and Fetal Deformity.—Tur points out that the formation of the amnion depends on the extra-embryonic portion of the ovum, and has no relation with the development of the embryonic organs. This explains why a monster may be invested with a perfectly normal amnion.

Creatinin in Children's Blood.—Lesné, Hazard and Langle say that the amount of creatinin in the blood seemed to change very little in diseases, in infants and other children. Only in chronic nephritis with azotemia the content was always increased. Hypercreatininemia occurred in bronchopneumonia, testifying to a bad prognosis.

Pancreatic Secretion Under Action of Insulin and Secretin.—In Lambert and Hermann's experiments on dogs, with a pancreatic fistula, insulin did not augment the external pancreatic secretion, while a profuse secretion occurred under the influence of secretin.

Paris Médical

81-96 (Jan. 24) 1925

Iodized Oil in Subarachnoid and Epidural Injections. Roger.—p. 81.
*Flint's Phenomenon. R. Ceruti.—p. 91.
Pelvic Appendicitis. A. Schwartz.—p. 94.

Clinical Value of Flint's Murmur.—Ceruti says that the murmur, which was described by Flint as presystolic, in cases of aortic regurgitation without mitral stenosis, is not a real presystolic murmur. It may be an obscured first sound, or a murmur which accompanies the whole, or a part of the first sound. But it is never as intense as the presystolic murmur, and has not the crescendo quality of this murmur. He consequently denies any clinical value to Flint's phenomenon.

Presse Médicale, Paris

33: 65-80 (Jan. 17) 1925

*Pulmonary Edema in Epilepsy. L. Langeron.—p. 65.
*Kineplastic Disarticulation of Elbow. Bosch Arana.—p. 67.
Resistance to Electric Current, and Polarization, in Living Organisms. A. Strohl.—p. 69.

Case of Acute Pulmonary Edema Complicating Epileptic Seizure.—Langeron describes a case of epilepsy that developed at the age of 40, in which every seizure was complicated by acute pulmonary edema. Irritation, inducing changes in the vasomotor roots of the sympathetic, may have produced an intense vasodilatation entailing the pulmonary edema. It is probably the same irritation which in the cerebral cortex may be the causal factor of the seizures. Congenital syphilis was probable.

Kineplastic Disarticulation of the Elbow.—Bosch Arana illustrates the technic for this operation. It consists in disarticulation of the radius, while respecting the humero-ulnar joint, and construction of a loop to allow volitional control of the prosthesis.

33: 81-96 (Jan. 21) 1925

Study of Muscular Contracture. L. Haskovec.—p. 81.
*Painful Pronation in Children. P. Kervrann.—p. 84.
Retractor for Slit Sternum. Hantcher.—p. 85.

Immobilization of Arm in Pronation in Children.—Kervrann gives an anatomic and physiologic explanation of this fre-

quent occurrence in early childhood. The injury is usually produced by lifting a child by the hand as in swinging it over an obstacle, or while preventing it from falling. The abrupt traction on the child's forearm, extended in pronation, displaces the synovial pad, which becomes nipped between the head of the radius and the condyle. The sudden pain causes the child to immobilize the arm in pronation. The mechanism is like that with luxation of the semilunar cartilage in the knee.

SB: 97-112 (Jan. 24) 1925

*Rickets and Light. A. B. Marfan.—p. 97.
*Sympathectomy in Gynecology. G. Cotte.—p. 98.
Tests of Body Fluids in General Paralysis. R. Targowla.—p. 99.

Light Treatment in Rickets.—Lack of sunlight may not be the principal factor in rickets, but the favorable action of heliotherapy and especially of ultraviolet rays on the general nutrition in rickets is beyond question. Marfan adds that light treatment may materially hasten recovery.

Periarterial Sympathectomy in Gynecology.—Cotte suggests pelvic periarterial sympathectomy in treatment of dysmenorrhea without lesions in the genitalia, in pelvic neuralgia with pains in the ovary, uterus, or uterosacral ligaments, the pains not connected with the menses, and in vaginism. All these disturbances may result from changes in the pelvic sympathetic system. He reports on five patients cured by resection of the adventitia of the hypogastric artery, with no recurrences to date, up to ten and fourteen months. In a sixth case, ovaritis of neuralgic nature with dysmenorrhea, subsided after partial resection of the ovary followed by severing the presacral portion of the nerve. Menstruation has been painless since. The resection of the nerve did not cause any disturbance in the bladder or rectum.

Revue Médicale de la Suisse Romande, Geneva

48: 1-64 (Jan. 25) 1925

*Treatment of Whooping Cough. J. Taillens.—p. 3.
Diagnosis of Compression of Spinal Cord. Brunschweiler.—p. 15.
*Relation of Sympathetic System to Dermatoses. J. Golay.—p. 39.
Diuresis and Purgation. M. Roch.—p. 51.

Treatment of Whooping Cough.—After his experience in over 500 cases Taillens continues to prefer the use of a sedative. With regard to other measures, he obtained no certain therapeutic results from vaccine therapy or epinephrin, while the intramuscular injection of ether proved painful, and was uncertain in its action.

Relation of the Sympathetic System to Dermatoses.—Golay illustrates this connection by the case of a woman, aged 25, with dermatitis herpetiformis, of a year's duration, and further manifestations, which he cites in proof of the origin of the skin disease in disturbances of the sympathetic system. They are: (1) the preeruptive nature of the accompanying pruritus; (2) the extraordinarily symmetrical distribution of the lesions; (3) the hyperhidrosis, and (4) the acute exacerbation at each menstrual period. The final proof, he says, was the improvement of the condition by desensitization with own blood and later with protein therapy. Protein therapy, according to Rosenthal and Holzer, owes its action to a modification of the excitability of the sympathetic system.

Schweizerische medizinische Wochenschrift, Basel

55: 1-24 (Jan. 1) 1925

*Smallpox and Chickenpox. H. Sahli.—p. 1.
*Central Action of Cocain. H. W. Maier.—p. 13.
Action of Laxatives on the Colon. M. Guggenheim.—p. 16.

Smallpox and Chickenpox.—Sahli finds that all the diagnostic aids in differentiating smallpox from chickenpox in doubtful cases are unreliable. This applies to Paul's test on the rabbit cornea as well as to diagnostic vaccination. The latter may be positive in smallpox and negative in chickenpox. He promulgates a neo-unitarian theory: The virus of chickenpox is a mutation of the smallpox virus, a little farther removed than vaccinia. The difference in virulence is not merely quantitative, but qualitative. He believes that true smallpox may originate exceptionally from chickenpox.

Central Action of Cocain.—Maier agrees with Schroeder that the mental signs of intoxications may be regarded as symptomatic psychoses, in which additional factors (the constitution and the general condition at the moment) cooperate. The acute hallucinosis of drunkards is as a rule a reaction to alcohol in persons with a schizophrenic predisposition. The local anesthetic action of cocain is due to its benzoyl group, while the ecgonin acts on the central nervous system. Cocain stimulates the motor and sensory functions. Contrary to other poisons, it does not impair the results, although accelerating the action—for instance, in adding figures. Yet this is practically without advantage because the attention is too much distracted. Caffein alone may compare with cocain in the function-stimulating effects. The cocain delirium does not prevent a self-criticism, but it is more dangerous than the alcoholic, because the good functioning of the organs may cause a disaster in handling weapons. There is less desire to sleep. The sympathetic is stimulated; libido in women is increased, in men decreased. A tendency to spasms is present. Chronic cocainization causes grave degeneration in the brain and vessels. The drug may be discontinued without grave abstention disturbances. The intoxication resembles the triad of exophthalmic goiter symptoms. He emphasizes the increase of activity of the highest psychic functions coincident with the exaggeration of sympathetic functioning.

58: 26-44 (Jan. 8) 1925

*Dangerous Improvement of Gasoline. H. Zangger.—p. 26.
*Forceps in Prolonged Expulsion Period. R. L. Rochat.—p. 29.
*Treatment of Cardiovascular Disease. E. Attinger.—p. 31.
*Brain Changes in Sunstroke. W. Schwab.—p. 33.

Dangerous Improvement of Gasoline.—Zangger points to the dangers of the products of tetra-ethyl lead for communities. At least 10,000 kg. of lead would be blown into the streets of Zurich in one year. He requests the Swiss government to prohibit its importation.

Forceps in Prolonged Expulsion Period.—Rochat believes that prolongation of the expulsion period over three hours has an unfavorable influence on mother and child. He applies forceps in such cases, even when the condition of both is good.

Treatment of Cardiovascular Disease.—Attinger finds that smaller doses of quinidin are sufficient after a good digitalis treatment. He also follows the latter with chronic administration of small doses of digitalis.

Brain Changes in Sunstroke.—Schwab reports the history and necropsy findings in a case of sunstroke. He points out that there is always a combination with general overheating of the body. The brain contained many small hemorrhages.

Pediatria, Naples

33: 1-55 (Jan. 1) 1925

*Hematopoietic Organs in Rickets. S. de Villa and G. Cartia.—p. 1.
Physical Development in Tuberculosis. S. Fabris.—p. 9.
*Congenital Brittle Bones. U. Ferri.—p. 20.
*Herpes Zoster and Chickenpox. G. Battino.—p. 31.
Exanthema Subitum. A. Gismondi.—p. 36.
Enlargement of Liver and Spleen from Pyelocystitis. A. Mazzeo.—p. 41.

Hematopoietic Organs in Rickets.—Villa and Cartia confirm the lower color index with the almost normal leukocyte count in rickets. The microscope revealed extreme activity in the bone marrow.

Congenital Fragility of the Bones.—Ferri's patient, a girl 4 months old, with multiple fractures of long bones, had 25 mg. of ionized calcium in 100 c.c. of cerebrospinal fluid. No organically bound calcium was found. After twenty-two irradiations with a quartz lamp, the ionized calcium was 28 mg. and the total 39 mg. No fractures occurred after this treatment.

Herpes Zoster and Chickenpox.—Battino concludes that the virus of chickenpox and of herpes zoster is identical or quite similar.

Policlinico, Rome

32: 1-40 (Jan. 5) 1925

*Dangers of Camphor in Liver Diseases. G. Sabatini.—p. 3.
Remote Results of Sympathectomy. L. Dominici.—p. 7.
Intracardiac Injection of Epinephrin in Intraspinal Anesthesia Syncope. P. Mazotti.—p. 9.
"Bismuth in Organic Fluids." D. Ganassini.—p. 11.

Dangers of Camphor in Liver Diseases.—Sabatini has observed frequently an intolerance for camphor in patients with affections of the liver and biliary passages. One woman had received after cholecystectomy two injections of camphor in oil daily. In about twelve days she was vomiting, extremely weak, her tongue was dry, and the pulse thready. She recovered within twelve hours after the injections were discontinued. He explains the intolerance by the impaired coupling of the camphor with glycuronic acid in affections of the liver.

Riforma Medica, Naples

41: 1-34 (Jan. 5) 1925

*Glycemia in Parkinson's Disease and Parkinsonism. U. de Giacomo.—p. 1.
Digestive Hemoclasia. G. Mangeth.—p. 3.
Amyotrophic Lateral Sclerosis. S. Perrier.—p. 5.
*Urine Reaction After Sodium Chlorid. G. de Nita.—p. 7.
Trichophytoses. J. Cappelli.—p. 8.

Glycemia in Parkinson's Disease and Parkinsonism.—Giacomo attributes the hyperglycemia in postencephalitic parkinsonism to disturbances of the liver. The blood sugar is normal or only slightly augmented in paralysis agitans. The latter is probably due to senility and arteriosclerosis of the brain.

Urine Reaction After Sodium Chlorid.—Nito confirms Falk's observations on the alkalinity of the urine in dogs after intravenous infusion of sodium chlorid.

A. M. M., Mexico

2: 613-666 (Dec.) 1924

*Malta Fever in Mexico. F. Ocaranza and G. Varela.—p. 615.
Histologic Diagnosis During Operations. Valdés and Ferrán.—p. 636.
Pathogenesis of Chlorosis. L. Ramírez.—p. 639.
Disarticulation of the Shoulder. G. Baz.—p. 638.
Essential Supramesocolonic Peridoudenitis. F. Hernández.—p. 643.
Impressions of Surgery in the United States. F. Campuzano.—p. 645.

Sporadic Cases of Malta Fever in Mexico.—Ocaranza emphasizes the difficulty in diagnosing Malta fever when the course differs from the classic description. The fever may be continuous or intermittent, and the symptoms attenuated or malignant. A number of sporadic cases that have been observed in Mexico are cited; no endemic foci have been found as yet. Cultivation of the blood is not positive in all cases, but the intradermal reaction is simple, and seems to be constantly positive by the seventh to the tenth day and for months afterward.

Brasil-Medico, Rio de Janeiro

2: 251-268, 1924

Experiments with the Indian Method of Cataract Extraction. G. de Andrade.—p. 251.

Repertorio de Medicina y Cirugía, Bogota

28: 545-592, 1924

Ethyl Chlorid Anesthesia. P. Diaz F.—p. 548.
*Infantile Scurvy. F. G. Shipley and A. Peña Chavarría.—p. 553.
Early Physicians of Bogota. J. M. Restrepo Sáenz.—p. 575.
*Cancer and Tuberculosis at Bogota. E. Enciso.—p. 584.

Infantile Scurvy.—This is an exhaustive study of about 200 cases in the children's department of Johns Hopkins Hospital, Baltimore.

Cancer and Tuberculosis at Bogota.—Enciso's charts show a death rate from pulmonary tuberculosis of 8, 10 and 16 per ten thousand inhabitants for the years 1904, 1909 and 1921, respectively. Other forms of tuberculosis have shown a decline, from 10.8 in 1904 to 6.84 in 1921. Cancer in this period has increased, the lines crossing in 1915. Since then the cancer death rate has constantly increased. It is evident that many cases of cancer before then had been erroneously labeled tuberculosis. The cancer death rate was 5 in 1904, 10 in 1916 and 10.5 in 1920. Cancers at Bogota seldom reach the physician before the operable stage is practically past.

28: 593-640, 1924

The Bill Regulating the Practice of Medicine and Pharmacy in Colombia. E. Cardenas M. and L. Gonzalez Gomez.—p. 598.
*Treatment of Uremia. C. Cardoso.—p. 599.
Organized Measures for Hygiene. E. Enciso.—p. 618.

Treatment of Uremia.—Cardoso declares that the method of rinsing out the blood by utilizing osmosis in the lower bowel has not been given the attention it deserves. Just as mercury and arsenic may be eliminated through the bowel walls, the poisons in uremia can be cast off in this way if the osmosis process is artificially stimulated. He was much impressed with the subsidence of the graver symptoms of uremia in two cases described when he gave series of repeated enemas, each of 2 liters with a teaspoonful of sodium bicarbonate, at body temperature. The water is retained as long as possible, and five minutes after it has been expelled, another enema is given, and so on, allowing a rest of one or more hours between each series of five or six enemas, keeping this up for a day or two. The enema treatment is preceded by a drastic purge, and the patient is encouraged to drink as much bicarbonated water as possible. The headache in anuria is relieved almost at once by the first enemas, and the tint of the water suggests that the coloring matters of the urine are being voided through the bowel walls.

Revista Medica de Piracicaba

1: 1-40, 1924

Intraspinal Serotherapy of Chorea. O. Pentagna.—p. 1.
*Intra-Articular Serotherapy in Gonococcal Arthritis. J. J. Ortigão de Sampaio.—p. 11.
Treatment of Bronchopneumonia. Rodrigues de Almeida.—p. 20.

Purulent Gonococcal Arthritis.—Ortigão de Sampaio's patient developed multiple arthritis four days after the appearance of a gonorrheal urethral discharge. He gave subcutaneous injections of an antigonococcus serum with little benefit. Then he injected the antiserum directly into the joint, after partly evacuating the pus by puncture. The various joints healed without ankylosis. The antiserum protected the joint against the local production of toxins by the gonococci.

Deutsche medizinische Wochenschrift, Berlin

51: 49-90 (Jan. 9) 1925

*Experimental Atherosclerosis. M. Versé.—p. 49.
Economy in Treatment of the Neurasthenic. Goldscheider.—p. 53.
*Cocain and Sex Life. G. Aschaffenburg.—p. 55.
*Extreme Edema of the Vulva in Pregnancy. O. Hoehne.—p. 57.
Milk for Children. H. Kleinschmidt.—p. 58.
*Treatment of Psoriasis. Höbner.—p. 59.
Psychanalysis from Psychiatric Standpoint. Birnbaum.—p. 62. Cont'n.
The Fluids of the Eye. O. Weiss.—p. 63. Conc'n.
Koch-Weeks' and Influenza Bacilli. M. Knorr.—p. 65.
*Variation of Streptococci. W. Rother.—p. 66.
Spondylitis with Advancing Ankylosis. M. J. Gumnann.—p. 67.
Soap Treatment of Tuberculosis and Bronchitis. K. Brünecke.—p. 68.
Spontaneous Destruction of Testis. Enzu.—p. 70.
Recent Works on the Digestive Apparatus. G. Lepehne.—p. 70.
*Vital Statistics in Switzerland. Frey.—p. 73. Conc'n.

Experimental Atherosclerosis.—Versé regards retention of fats in the blood as the most important factor in experimental arteriosclerosis of rabbits. This condition is realized by simultaneous ingestion of fat and cholesterol. The blood pressure increases as a rule. When this feeding was discontinued, fibrous and muscular proliferation in the vessels occurred as a compensatory phenomenon. Changes of the coronary arteries and secondary degeneration of the heart were frequent. Although the concentration of fats in human blood is lower than in the experimental rabbits, he points out that the duration is much longer in man. He compares the cholesterol diatheses, such as atherosclerosis, xanthoma and gerontoxon, with uric acid and calcium gout.

Cocain and Sex Life.—Aschaffenburg reports in detail the history of a cocain addict. During the second year his potency decreased while the libido increased, his fantasies becoming homosexual. The patient recovered.

Extreme Edema of the Vulva in Pregnancy.—Hoehne demonstrates with five cases of edema of the vulva in pregnant women the danger of gangrene and sepsis. He prevents this by making a horizontal incision, 6 cm. long, above the

symphysis, and mechanically forcing out the edema fluid through this opening.

Treatment of Psoriasis.—Hübner saw the best results of his combined treatment in the young. He applies a 0.25 per cent. chrysarobin paste locally.

Variation of Streptococci.—Rother found the optimum for the hemolytic action of streptococci in a blood agar containing from 0.036 to 0.053 per cent. glucose. When the sugar concentration reached 0.085 or 0.134 per cent. all the streptococcus colonies were green.

Vital Statistics in Switzerland.—Frey extols the Swiss population and mortality statistics. A confidential report on the cause of death, the deceased specified by a number, is mailed to the central office by the physician.

Jahrbuch für Kinderheilkunde, Berlin

107: 329-386 (Jan.) 1925

Pathogenesis of Acute Digestive Disturbances in Infants. F. Silberstein and G. Singer.—p. 329.
Convalescents' Serum in Prevention of Chickenpox. Barabás.—p. 343.
Pathogenesis of Acute Digestive Disturbances. W. Catel.—p. 347.
*Etiology of Endemic Cretinism and Goiter. B. Ebbell.—p. 354.

Etiology of Endemic Cretinism and Goiter.—Ebbell incriminates the drinking water, ascribing the noxious action to radium salts and similar radio-active substances which are frequently present in spring water. The hypothesis accords with the characteristic mountain incidence of goiter and cretinism, and the colloidal form, in which the radio-active substances are often present, explains, he says, the prevention of goiter by the boiling of the drinking water.

Klinische Wochenschrift, Berlin

4: 49-96 (Jan. 8) 1925

Mechanical Problems in Surgery. E. Melchior.—p. 49.
Tonus of Muscles. O. Riesser.—p. 52. Cont'n.
*Roentgen Rays and Hormones. O. Risse and F. Poos.—p. 60.
*Ventricular Fibrillation and Adams-Stokes. H. von Hoesslin.—p. 62.
*Headaches After Intraspinal Anesthesia. R. T. von Jaschke.—p. 65.
*Periarterial Nerves and Sensory Paths. H. Dennig.—p. 66.
*Registration of Gas Metabolism. J. G. Dusser de Barenne and G. C. E. Burger.—p. 68.
Inhalation of Insulin. M. Gänsslen.—p. 71.
"Univitelline Sisters" with Different Colored Eyes. L. v. Zumbusch.—p. 71.
*Bactericidal Serum. A. Felix and L. Olitzki.—p. 72.
*The p_H of Bacterial Colonies. W. W. Radzimowska and M. C. Jazimiraka.—p. 72.
*Initial Fever in Malaria. D. van den Bergh.—p. 73.
Treatment of Meningitis. G. Liebermeister.—p. 73.
Aims of Pharmacology. A. Jarisch.—p. 76.
War Malaria. H. Ziemann.—p. 80.

Roentgen Rays and Hormones.—Risse and Poos irradiated rabbits after unilateral extirpation of cervical ganglions and atropinization of the eyes. The pupil contracted although the opposite was expected from the probable increase in the secretion of epinephrin. Experiments made on animals after extirpation of the pancreas or of the suprarenals point to the probability that the phenomenon is due to an increased secretion of insulin.

Ventricular Fibrillation and Adams-Stokes.—Hoesslin's patient has complete auriculo-ventricular dissociation with Adams-Stokes' syndrome. The attacks begin with ventricular fibrillation followed by a standstill of the ventricles.

Headaches After Intraspinal Anesthesia.—Jaschke is inclined to attribute the cause of headaches after lumbar anesthesia to changes in the anesthetic. If a derivative of cocain in salt solution was preserved in ampules for more than three months, the headaches became more frequent. Refractometry showed changes in the fluid. The preparations keep much longer if no sodium chlorid is added.

Periartorial Nerves and Sensory Paths.—Dennig finds no indications of the presence of long sensory nerves in the adventitia of arteries. Lactic acid injected into them produces pain if the adventitia is removed without ligation of the artery.

Registration of Gas Metabolism.—Barenne and Burger determine the oxygen intake and carbon dioxid elimination in man by a registration method—without gas analysis.

Bactericidal Serum.—Felix and Olitzki conclude that the bactericidal and complement fixing antibodies against the typhoid-colon group are identical with the agglutinins producing fine flakes. Small floccules are produced by injections of germs heated to 100 C. These stable antigens ("O receptors") absorb all the antibodies mentioned, while they leave intact those agglutinins which cause coarse flocculation.

The p_H of Bacterial Colonies.—Radzimowska and Jazimirska were able to determine the hydrogen ion concentration of single colonies of germs.

Initial Fever in Malaria.—Bergh's patient had malaria of the tertian type, with continuous fever in the first few days.

Medizinische Klinik, Berlin

21: 41-76 (Jan. 11) 1925

Action of Protein Therapy in Tuberculosis. J. Sorgo.—p. 41.
*Treatment of Ileus. W. Zweig.—p. 44.
Symposium on Gallstones. Hotz.—p. 46. Cont'n.
*Treatment of General Paralysis. A. Kutzinski.—p. 46.
*Unilateral Changes of Capillaries. E. Hirsch.—p. 48.
Gummas in Aortic Aneurysm. Arndt.—p. 51.
*Early Diagnosis of Diabetes. C. Gimenez Diaz.—p. 54.
Cisterna Puncture. J. Jánossy.—p. 55.
"Physician and Bacteriologic Institute." Köster. Reply. Loele.—p. 57.
Anaphylactic and Atopic Oversensitiveness. A. F. Coca.—p. 57.
Treatment of Scoliosis. M. Blumenthal.—p. 60.
Blood Specimen Tube. E. Kantorowicz.—p. 61.
Survey on Psychoanalysis. W. Stekel.—p. 62.
Thierfelder's Centenary. H. Curschmann.—p. 75.
Practical Results of Study of Heredity. J. Bauer. Supplement.—pp. 1-30.

Treatment of Ileus.—Zweig admits conservative treatment in the beginning of a paralytic, spastic and hysteric ileus. Heat, physostigmin, pituitary extracts may be found useful in the paralytic, large doses of atropin in the spastic type. The general condition is good in the rare hysterical cases. Yet the conservative treatment should not be continued over twenty-four hours.

Treatment of General Paralysis.—Kutzinski treated a general paralysis patient with arsphenamin. Urticaria and prolonged fever followed. The patient recovered in every respect except for the changes of the pupils. Another patient, with absolutely typical clinical features of paralysis, gave entirely negative serologic and cytologic findings in the serum and cerebrospinal fluid.

Unilateral Changes of Capillaries.—Hirsch's patient is an epileptic young woman. She had a miosis of the left pupil and microscopically twisted capillaries on the left hand. Both symptoms disappeared after four years, together with a marked improvement in the number of seizures.

Early Diagnosis of Diabetes.—Gimenez Diaz confirms Schmidt's observation on the absence of fever reaction to foreign proteins in many diabetic patients. He found the phenomenon frequently in descendants of diabetic patients, and associated with a lowered sugar tolerance.

Monatsschrift für Geb. und Gynäkologie, Berlin

68: 75-198 (Jan.) 1925

Pregnancy Bilateral Hemianopia. Stargardt and Schall.—p. 75.
"Mechanism of Birth Process." Pulvermacher.—p. 82. Idem: The Least Resistance in General and Mathematical Sense. H. Sellheim.—p. 87.
Pubiotomy with Interposed Autotransplant. W. T. Schmidt.—p. 96.
True Vaginal Cesarean Section. N. Kakuschkin.—p. 101.
Breech Delivery with Use of Head Forceps. N. Mansbach.—p. 104.
Radiotherapy in Malignant Gynecologic Tumors. Kupferberg.—p. 106.
Ectopic Endometrial Implants. A. Lauche.—p. 113.
Endometrial Adenomyomas in Genitals in Anglo-American Literature. A. Haeuber.—p. 123.
Prevention of Postoperative Adhesions. R. Kräuter.—p. 133.
*Experimental Cancer Research. G. Döderlein.—p. 139.
Radiotherapy in Gynecology in 1923. C. H. Engelbrecht.—p. 160.

Some Cancer Questions.—Döderlein insists that irreversible growth and autodestructive boring into the depths are the two characteristic features of experimental cancer. Metastasis and transplantability are not indispensable for the assumption of malignant disease, as we know that human cancer is not always accompanied by metastasis, while we see the animal die of the malignant disease even when transplants from it fail to "take." Experimental cancers have taught us that malignancy may be installed long before any histologic

evidence of it is attainable. He regards it as significant that of all the numerous substances used to induce experimental cancer, only those succeed which are soluble in oil. The main thing in cancer research now is to learn why certain animals in the same litter develop cancer while others do not. What is the difference which allows malignant growth in one and not in the other? Another promising field is the study of the histologic changes just preceding the development of cancer. When it induces visible changes, it is already far advanced.

Monatsschrift für Kinderheilkunde, Leipzig

29: 193-288 (Dec.) 1924

*Interstitial Myocarditis in Infancy. K. Blühdorn.—p. 193.
*Effect of Hemolysed and Unchanged Blood. F. Metis.—p. 199.
Pathogenesis of Different Types of Tetany. O. Tesner.—p. 207.
Two Cases of Hemolytic Anemia. O. Herz.—p. 224.
Blood Transfusion in Infants. L. Perid.—p. 230.
*Infants' Sense Reactions Before Birth. A. Peiper.—p. 236.

Interstitial Myocarditis in Infants.—In Blühdorn's first case, in an infant, aged 9 months, necropsy showed marked hypertrophy and dilatation of the heart. The typical clinical findings in his other two cases of infants, aged 15 and 18 months, indicate primary dilatation and hypertrophy of the heart. The prognosis is unfavorable, yet with intramuscular injections of strophanthin the second child has survived a number of grave attacks, and the third, one recurrence, and it may be possible to bring the children successfully through a certain dangerous period.

Comparative Study of Effect of Hemolysed and Unchanged Blood.—Metis' experiments on dogs and rabbits, also observations in persons, showed an essential difference in the results after introduction of the same quantity of intact and of laked blood cells. An increased number of erythrocytes in the blood stream, corresponding to the quantity introduced, appeared only after the injection of the unchanged cells, which points to the viability of the intact corpuscles.

Sense Reactions of Infants Before Birth.—Peiper noted definite changes in the respiration curve on a sudden loud noise in four out of the six infants tested in the first hour after birth. His tests made late in pregnancy showed that the sudden, close honk of an automobile horn could cause demonstrable movements in the unborn infant. As in the new-born, the reaction disappeared on repetition of the noise, which apparently leaves a trace, for a time, hindering new reactions.

Münchener medizinische Wochenschrift, Munich

72: 45-80 (Jan. 9) 1925

*Cancer of the Bladder. E. Joseph.—p. 45.
*Convalescents' Serum in Scarlet Fever. J. Langer.—p. 47.
*Nonspecific Serodiagnosis. H. E. Büttner.—p. 50.
*Ascaridiasis. E. Goldschmidt.—p. 52.
*Uremia and Permeability of Meninges. F. K. Walter.—p. 54.
Epidemiology of Poliomyelitis. W. Graef.—p. 55.
Lumbar Punctures in Poliomyelitis. S. Wolff.—p. 56.
*Spleen Irradiation in Asthma. C. Pöhlmann.—p. 57.
*Stricture or Fistula in Urethra. F. Otto.—p. 58.
Invagination Ileus in Polyposis. M. Baumann.—p. 58.
Colitis in Children. F. W. Strauch.—p. 60.
Beginnings of Modern Medicine. G. Honigmann.—p. 62.

Cancer of the Bladder.—Joseph finds that resection of a cancer of the bladder has a chance only if the growth is situated near the apex of the bladder, which is exceptional. Total extirpation of the bladder is indicated in beginning cancer of the base. In later stages it shortens the life, although it frees the patient from the tenesmus and bleeding. If the operation is refused or not indicated, palliative cauterization with trichloracetic acid or thermocoagulation has beneficial effects. The patients may live for several years free from suffering.

Convalescents' Serum in Scarlet Fever.—Langer reports on 786 scarlet fever cases in children observed in nineteen months. Only three of the patients were less than a year old and two of these died. The maximum incidence was between the second and fourth years. The mortality was 5.47 per cent. in the first 494 cases. After this, intramuscular injections of 30-70 c.c. of convalescents' serum were given in forty of the graver cases. The mortality in this second series was 3.77 per cent.

Nonspecific Serodiagnosis.—Büttner thinks that the tests of colloid instability in the serum would be more valuable for diagnosis and prognosis, if the tests were made in health and compared with the findings in incipient disease. One half of thirty healthy soldiers had a positive Mátéfy test. Three of them were strongly positive.

Ascaridiasis.—Goldschmidt describes atypical small shriveled forms of ascaris ova, almost without the characteristic albuminous zone. He recommends oil of chenopodium for treatment.

Uremia and Permeability of Meninges.—Walter administers for five days daily 0.05 gm. of sodium bromid per kilogram of body weight. The sixth day, blood and cerebrospinal fluid are drawn, and the bromid content compared by the gold chlorid test. Normally the serum contains three times (between 2.90 and 3.30) the amount of bromid in the cerebrospinal fluid. He found a quotient of 2.20 in a woman whom he believed to be uremic.

Spleen Irradiation in Asthma.—Pöhlmann confirms Groedel's observation that the therapeutic effect of irradiation of the spleen in asthma patients is proportional to the intensity of the "roentgen jag."

Stricture or Fistula in Urethra.—Otto uses roentgen rays for diagnosis of strictures, fistulas or false passages in the urethra.

Wiener klinische Wochenschrift, Vienna

38: 61-84 (Jan. 8) 1925

Pathogenesis of Rickets. A. v. Bonányi.—p. 61. Cont'd.
*Protein Treatment of Diabetes. G. Singer.—p. 64.
*Function Test of Reticulo-Endothelia. P. Saxl and F. Donath.—p. 66.
*Retrograde Peristalsis. L. Schönbauer.—p. 68.
*Modified Radium Treatment. V. Altmann.—p. 70.
Endemic Goiter in Children. H. Schroetter.—p. 72.
Diet in Nephritis. V. Kollert.—p. 74.
Roentgen Biology and Therapy. L. Freund.—p. 75. Conc'n.
Extra-Uterine Pregnancy. J. Schiffmann. Supplement.—pp. 1-12.

Protein Treatment of Diabetes.—Singer reports fair results of treatment in three different types of diabetic patients. He attributes the success to the parenteral protein therapy applied.

Function Test of Reticulo-Endothelia.—Saxl and Donath injected a fine emulsion of oil intravenously, and observed the hemoconia with dark-field illumination. The hemoconia disappeared from the blood in normal subjects within six to nine minutes; in cases of exophthalmic goiter, in three minutes, and in cirrhosis of the liver, in twelve to fifteen minutes. A preliminary "blocking" of the reticulo-endothelial apparatus by colloidal silver or by pituitary extracts prolongs the time. The injection killed splenectomized animals with ligated hepatic artery and portal vein.

Retrograde Peristalsis.—Schönbauer injected a suspension of lycopodium into the rectum before laparatomies. He found the lycopodium in the vomit of one patient twenty-four hours afterward. A similar retrograde movement was demonstrated in a dog with experimental peritonitis. Resection of the pneumogastric prevented the retrograde peristalsis. This explains the beneficial effect of atropin.

Modified Radium Treatment.—Altmann applies radium in containers which allow the passage of only narrow cones of rays.

Zeitschrift für klinische Medizin, Berlin

101: 1-248 (Dec. 30) 1924

*Serodiagnosis of Tuberculosis. F. Klemperer and A. Salomon.—p. 1.
*Carbohydrate Metabolism and Insulin. A. Gigon.—p. 17.
*Fat Ingestion and Diuresis. W. v. Moraczewski.—p. 38.
*Gas Metabolism in Nephritis. W. Maurer and W. Siebert.—p. 47.
*The Acidity of the Urine. J. Brock.—p. 51.
*Subcutaneous Epinephrin Test. K. Dressel.—p. 70.
*Lipoids in Kidneys and Liver. J. Iwantscheff.—p. 85.
*Vasomotor Affections of the Large Intestine. R. Blum.—p. 102.
*Univitelline Twins. W. Weitz.—p. 115.
*Erythrocytes and Alkalinity of the Blood. E. Földes.—p. 155.
*The Organs in Mercury Poisoning. M. Wichert and A. Jakowlewa.—p. 160. Idem. M. Wichert et al.—p. 173.
Cholesterolemia and Bilirubinemia. M. Wichert and A. Russjajewa-Oparina.—p. 185.
*After-Effects of Thermic Stimuli. A. J. Weil.—p. 195.
The Pain in Ulcer. L. Hirschberg.—p. 205.

*Valsalva Test and the Circulation. G. Galli.—p. 221.
*Fyelitis and Cystopyelitis. * Beckmann and van der Reis.—p. 229.

Serodiagnosis of Tuberculosis.—Klemperer and Salomon had 73.2 per cent. positive results with Wassermann's antigen, and 89.5 per cent. with Besredka's, in active tuberculosis. The controls (including syphilis) were positive in 27 and 46.7 per cent., respectively.

Carbohydrate Metabolism and Insulin.—Gigon determined the sugar in the general circulation, the thoracic duct and the portal and hepatic veins. All the figures found after ingestion of sugar were about equal. He concludes that a part of the sugar is resorbed with the chyle, and that no sugar is retained by the liver during the first passage. The hyperglycemia disappears before all the ingested sugar is resorbed. Alcohol and olive oil lower the glycemia in health and in diabetes. The gas metabolism does not parallel the food intake. A connection between the fat and the carbohydrate metabolism might explain it. Experimental beriberi is not a pure avitaminosis. Injections of vitamins do not prevent death if the one-sided diet is continued. He finds that prolonged feeding of patients with a carbohydrate diet has harmful effects. Infusion of glucose does not prevent death in rabbits that had received repeatedly large doses of insulin. The insulin poisoning is partly due to mobilization of a toxic substance. Rabbits fed with large doses of glucose are less resistant against insulin. When he fed rabbits with oil, their resistance increased. A diabetic patient recovered from her coma after receiving 760 units of insulin in forty-eight hours without any sugar; this dose would kill a healthy subject. A rabbit who received 10 c.c. of blood from a patient with diabetic acidosis developed cachexia.

Fat Ingestion and Diuresis.—Moraczewski observed an increased diuresis after ingestion of proteins (cheese), and a decreased after sugar and, especially, after fat. Addition of various salts had practically no influence on the fat oliguria. It resembled the retention of water following ingestion of citrates. The action was the reverse of that of iodids.

Gas Metabolism in Nephritis.—Maurer and Siebert determined the basal oxygen consumption in twenty nephritic patients who had no dyspnea nor edema. Four of them—the gravest cases—had a marked increase. Two other grave patients had normal or low values, the rest were normal. Aggravation of the clinical condition was accompanied by an increased oxygen consumption.

The Acidity of the Urine.—Brock publishes his titrimetric determination of the excess of acid in the urine.

Subcutaneous Epinephrin Test.—Dresel prefers the subcutaneous injection, chiefly because the changes of the blood pressure are less rapid than after intravenous injections. The method indicates the condition of the vegetative nerve system and tissues. Patients with exophthalmic goiter, but without increased pressure, after epinephrin injections react badly to thyroidectomy, because the vagotonia element becomes too predominant. A steep high curve speaks for sympathicotonia. Atropin does not always change the curve. This indicates the interference of other factors—probably the ions of the blood and tissues.

Lipoids in Kidneys and Liver.—Iwantscheff found deposits of fat in the interstitium of the kidneys (fat infarcts) regularly in persons over 60 years of age. The masses consisted of neutral fats and phosphatids. In acute and chronic infectious diseases, the epithelia of the kidney contain fat and phosphatids; in the liver cells he saw fat surrounded by cholesterol esters. The Kupffer cells contain cholesterol esters, if anything. The kidney in diabetes contains exclusively fat droplets, while the Kupffer cells are filled with cholesterol esters. In glomerulonephritis and amyloidosis, cholesterol esters are found in the epithelia of the kidney, but none in the Kupffer cells. The liver cells may contain fat surrounded by cholesterol esters.

Vasomotor Affections of the Large Intestine.—Blum attributes bleeding erosions of the rectum in some cases to a neurosis of the vasomotors. Atropin and a bland diet gave good results.

Univitelline Twins.—Weitz has collected and examined forty-five pairs of univitelline twins. The psychic resemblance was striking. Where he found differences, the twin with a larger circumference of the head was, as a rule, brighter. One pair died from cancer of the sex organs. One woman, who had been much exposed to the sun, had a cancer of the skin of the forehead. He disregarded all pairs which did not look alike, even if their monochorial origin was confirmed by the clinical records.

Erythrocytes and Alkalinity of the Blood.—Földes found in some acidotic diabetic patients an increase in erythrocytes after sodium bicarbonate, and vice versa. He found similar conditions in hyperthyroidism and after administration of thyroid substances. He attributes it to the increase of alkaline valences in the blood, which also cause an increased volume of erythrocytes. The condition is the reverse in hypothyroidism.

The Organs in Mercury Poisoning.—Wichert and Jakowlewa found much residual nitrogen, but very little indican, in the organs of animals poisoned with mercuric chlorid. Sodium chlorid was retained chiefly in the skin and muscles. Calcium salts and cholesterol infiltrate the necrobiotic foci.

After-Effects of Thermic Stimuli.—Weil observed a decreased reaction of the capillaries to a piece of ice in subjects after taking a warm bath. The change lasted for thirty to sixty minutes.

Valsalva Test and the Circulation.—Galli finds that most of the empiric tricks to stop attacks of paroxysmal tachycardia are in reality a Valsalva experiment. It was recommended by Hoffmann in this condition.

Pyelitis and Cystopyelitis.—Beckmann and Reis found colon bacilli as the cause of cystitis or cystopyelitis in only two thirds of their patients—chiefly women. They had fair results with 6 gm. of ammonium chlorid daily for three days, repeated after an interval of three to five days.

Zentralblatt für Chirurgie, Leipzig

SB: 65-112 (Jan. 10) 1925

*Phlebarteriectasia. F. Sonntag.—p. 66.
"Surgical Treatment of Hallux Valgus." E. Meyer.—p. 70.
Technic for Bone Suture. R. Demel.—p. 71.
Deutschländer's Metatarsal Bone Affection. A. Nast-Kolb.—p. 76.
*"Periarterial Sympathectomy in Tuberculosis of Bones and Joints." W. Gundermann.—p. 78.
Crucial Osteotomy for Curvature in Rickets. G. Brandt.—p. 79.

Phlebarteriectasia.—Sonntag's patient, aged 51, with progressive dilatation of the vessels in the left arm, including arteries, veins, and capillaries, and large, pulsating vein cysts, successfully underwent resection of some of the dilated vessels and extirpation of the cysts. For similar cases, of slow progression, in later life, this method is recommended, with gradual and careful procedure to prevent necrosis. In four of the twelve instances in the literature, amputation of the upper arm became necessary.

"Periarterial Sympathectomy in Tuberculosis of Bones and Joints."—Gundermann states that unexpected and lasting improvement in his cases followed sympathectomy, performed after all other methods of treatment had failed. It is not yet clear whether the results were due solely to the change of the blood supply in the extremities, or whether the disappearance of pain was important, or whether resorption conditions played a part. Reports on all operative cases are valuable, whether successful or unsuccessful, and should include the past history, the status before the operation, and the further course. He emphasizes that periarterial sympathectomy in tuberculosis of the bones and joints is only a last resort before surgical intervention, the indications to date being purely negative.

SB: 113-176 (Jan. 17) 1925

Modification of Mertens's Prostatectomy. W. Burk.—p. 114.
Dangers in Braun's Anastomosis. A. H. Hofmann.—p. 116.
Operative Treatment of Lumbar Hernia. G. Rechess.—p. 119.
Effect of Pituitary Extract on Intestines. H. Schmidt.—p. 121.
*"Postoperative Retention of Urine." D. Gall.—p. 123.
"Roentgenography of Urinary Tract." E. Schepelmann.—p. 124.

"Potassium in Postoperative Retention of Urine."—Gall's tests of the effect of solution of potassium acetate in thirty-

one patients with retention of urine, ten to twelve hours after surgical intervention, resulted favorably in only about 13 per cent. of the cases. Reimer reported success in 100 per cent. in his forty-nine cases.

88: 177-224 (Jan. 24) 1925
Inguinal Access to Bladder. K. Mermingas.—p. 178.
Fractured Patella Tied with Strip of Fascia Lata. J. Vorschütz.—p. 179.
*Esophagoplasty. J. Galpern.—p. 182.
Treatment of Fractured Clavicle. N. A. Spiegel.—p. 184.
Three-Pronged Skin Clamps. Zweifel.—p. 187. Idem. Glass.—p. 188.
Transactions of German Orthopedic Congress, 1924.—p. 189.

Improved Method of Esophagoplasty.—As only a serosa-serosa suture results in perfect union, Galpern aims to realize this in the distal end of the skin tube, above the layer of subcutaneous tissue, using a pedunculated or free transplant of omentum. In his experiments on dogs, he obtained a perfect union. Two rows of sutures were made, (*a*) the skin, including the entire thickness of the wall of the stomach, and (*b*) the peritoneum with the peritoneum covering the tube. He is inclined to believe that this is a dependable means for joining the stomach with the antethoracic artificial esophagus tube.

Zentralblatt für Gynäkologie, Leipzig

49: 1-64 (Jan. 3) 1925
Bacteriologic Prognosis and Diagnosis. G. Winter.—p. 1.
Obstetric Examination by the Rectum. F. Ahlfeld.—p. 4.
Examination by the Vagina During Labor. R. Schröder.—p. 6.
Vertex, Brow and Occipito-Posterior Presentations. H. Martius.—p. 21.
Congenital Syphilis. E. Klaften.—p. 30.
*Blood in Tube During Menstruation. H. H. Schmid.—p. 44.
Suprarenal Hemorrhage in New-Born Infant. Joseph and Rabau.—p. 48.
Hypnosis in Treatment of Dyspareunia. C. G. N. Nol.—p. 51.
Erythema Multiforme in Vagina. J. Holzschuh.—p. 56.
Unusual Malformation Impeding Delivery. W. Hoeck.—p. 61.
Case of Holes in Broad Ligament. E. Herrmann.—p. 63.

Blood in Tube During Menstruation.—Schmid presents the case of a young woman in whom surgical intervention, through error in diagnosis, clearly showed that the passage of blood through the fallopian tube into the abdominal cavity can occur, with genital organs somewhat hypoplastic but otherwise completely normal.

49: 65-112 (Jan. 10) 1925
Spontaneous Rupture of Gravid Uterus. O. Hoehne.—p. 66.
"Metabolism of Lipoids and the Ovary." R. Meyer.—p. 71. Idem. Mikulicz-Radecki.—p. 76. Idem. Wiczynski.—p. 80.
Own Blood in Treatment of Gonorrheal Bartholinitis. H. Hübner.—p. 84.
Puerperal Gas Bacillus Sepsis. E. Noltmann.—p. 85.
Two Fatalities After Blood Transfusion. K. Heim.—p. 96.
Spastic Posterior Parametritis. W. Rubesha.—p. 104.

49: 113-176 (Jan. 17) 1925
Technic of Digital Curettage. H. Füth.—p. 114.
Primary Abdominal Pregnancy. J. Meyer.—p. 118.
Rectus Muscle in Normal Condition, Pregnancy and Puerperium. H. Küstner.—p. 122.
Procedure and Diagnostic Errors in Tubal Insufflation. G. Frommolt.—p. 126.
Tubal Insufflation. E. Vogt.—p. 130.
Decidua Hyperplasia in Tubal Pregnancy. M. Speier.—p. 133.
Simultaneous Bilateral Tubal Pregnancy. M. Bordjoschki.—p. 140.
*Early Diagnosis of Extra-Uterine Pregnancy. Z. Bánki.—p. 142.
Hydrops of Fetus and Placenta. W. Hoeck.—p. 145.
Herff's Clamps for Perineal Tears. H. H. Schmid.—p. 148.

Early Diagnosis of Extra-Uterine Pregnancy.—Sharp pain felt by the patient when, with one or two fingers in the posterior fornix, the portio or entire uterus is pushed toward the symphysis, is a symptom of adhesive peritonitis due to the oozing of blood into Douglas' pouch before actual rupture of the tube. This is Bánki's sign of extra-uterine pregnancy, when corroborated by the history of the case. The sign is also valuable in differential diagnosis, testifying against criminal uterine abortion and appendicitis. The sign fails, although the ectopic pregnancy exists, in the exceptional case of old adhesions in Douglas' pouch.

49: 177-224 (Jan. 24) 1925
*Retroversion-Flexion of Uterus. R. T. v. Jaschke.—p. 189.
Case of Cleft Pelvis. C. Meyer.—p. 195.
Ileus After Ventrifixation. P. Fjeldborg.—p. 200.
Delivery with Almost Complete Vaginal Atresia. L. Kluger.—p. 201.
Temperature in Mamma During Lactation. K. Heusler.—p. 204.
Sellheim's Lever in Cesarean Section. E. Vogt.—p. 209.
*Dehiscence with Prolapse After Laparotomies. C. Holtermann.—p. 213.
†Cancer in Stump of Cervix. C. Fleischmann.—p. 219.

Significance of General Symptoms in Retroversion-Flexion of Uterus.—All the general symptoms cannot be attributed to the displacement of the uterus, nor can a psychoneurosis be regarded as the real basis for the many symptoms in retrodeviation. In the majority of cases, the indirect symptoms result from a general ptosis, which in nulliparas is usually due to a constitutional deficiency (most often general asthenia, with nervous symptoms). In acquired enteroptosis, the symptoms are caused by definite local complications and resulting functional disturbances. Jaschke pleads for meeting the indications in the individual cases in the operative treatment of retrodeviation.

Postoperative Dehiscence in Recent Laparotomy Wounds with Prolapse of Viscera.—Holtermann reports eleven cases. Prevention requires early recognition of a tendency to dehiscence, and removal of the direct cause without delay. The prognosis is grave. The treatment consists in immediate secondary suture with wire through the entire wall, at least including the fascia.

Cancer in Stump After Supravaginal Excision of the Uterus.—Fleischmann describes four cases, two not previously reported, and states that over fifty cases have now been recorded. In supravaginal amputation of the myomatous uterus, the tumors and the amputation surface of the cervix should be carefully examined for possible suspicious spots. Complications with morbid changes in the cervix (hypertrophy, extensive lacerations and ulcerations and catarrh of long standing) are also indications for total extirpation. Further, all patients after supravaginal amputation and all women castrated by irradiation should remain under observation for a number of years.

Zentralblatt für innere Medizin, Leipzig

46: 1-32 (Jan. 3) 1925
*Chronic Intermittent Hypertension. L. Hahn.—p. 2.

Chronic Intermittent Hypertension.—Hahn observed vasoneuroses in children of parents with hypertension. He believes that the chronic intermittent hypertension is the adult and senile form of a vasoneurosis. Blood pressure determinations repeated every twenty minutes reveal frequently wide differences in the course of a day. He considers changes of 15 mm. of mercury during the day time and a lowering of 25 mm. at night as normal limits.

46: 33-48 (Jan. 10) 1925
*Roentgen Treatment of Nephritis. G. Gabriel.—p. 38.

Roentgen Treatment of Nephritis.—Gabriel concludes from his experiments that the roentgen rays act on the tonus of the blood vessels. Hence their favorable influence in anuria.

Casopis lekaruv ceskych, Prague

64: 1-40 (Jan. 3) 1925
Foreign Bodies in Trachea and Bronchi. B. Wiskovsky.—p. 1. Cont'd.
*Circulatory Apparatus in Athletes. L. Filip.—p. 5.
Pseudodiverticula of the Duodenum. J. Divis.—p. 8. Cont'd.
*Perforated Gastric and Duodenal Ulcers. J. Podlaha.—p. 11.
*Urogenic Coefficient. J. Groedanovic.—p. 18.
*Treatment of Poliomyelitis. J. Svejcar and F. Dreuschuh.—p. 20.
*Fornet's Tuberculosis Reagent. R. Lubojeský.—p. 22.

Circulatory Apparatus in Athletes.—Filip found an organic affection of the circulatory organs in 7.6 per cent. of the amateur athletes examined. If the effort is made only in a "stimulating dose," the results are beneficial. They are disastrous in those affected who attempt to break records.

Perforated Gastric and Duodenal Ulcers.—Podlaha's statistics are based on the material of 5,000 necropsies. Among these he found in 22 per cent. of the gastric ulcers and in 28 per cent. of the duodenal a perforation into the peritoneal cavity. Less than two thirds of them had been given surgical treatment. He observed a case of fat necrosis twenty-six hours after perforation of a duodenal ulcer—without any lesion of the pancreas. The patient recovered. He pleads for the simplest operation—because the indication is vital, not radical—suturing the opening, covering with a flap of omentum, and cleaning out the peritoneum. The possibility of multiple perforations has to be always considered. He used in diagnosis Petrivalsky's symptom: In perforation

peritonitis, the disappearance of murmurs occurs first in the transverse colon, later in the ascending, and last in the cecum. The sequence is reversed in peritonitis from appendicitis.

Urogenic Coefficient.—Grozdanovic determined the urea, and made the formaldehyd titration in the urine and exudate of various patients. He used Vaňysek's formulation of Maillard's coefficient (formaldehyd nitrogen times 100, divided by the urea). The coefficient is high in exudates and low in transudates, the borderline being between 30 and 40. The formaldehyd nitrogen is above 0.03 per cent. in exudates and below in transudates. High figures of formaldehyd nitrogen (0.5) and a high coefficient (100) speak for resorption of an exudate. In cirrhosis of the liver, the coefficient was from 5 to 8 in the urine, from 8-20 in the ascites. In cancer of the liver, the urine gave 3-5, the ascites 30-40. Tuberculous peritonitis had 1-4 in the urine and 100 in the ascites.

Treatment of Poliomyelitis.—Svejcar and Dreuschuh report complete recovery from the poliomyelitic paralysis within five months in a girl 7 years of age. They used Bordier's method of roentgen treatment. (See THE JOURNAL, Nov. 10, 1923, p. 1643.)

Fornet's Tuberculosis Reagent.—Lubojacky cannot regard Fornet's reagent as an improvement in diagnosis.

Aichi Journal of Experimental Medicine, Nagoya

2 : 1-195 (Dec. 20) 1924

Behavior of Diphtheria Bacilli in Mixed Cultures. A. Adachi.—p. 1.
Degeneration of Mouse Corpus Luteum. C. Togari.—p. 23.
*The Labyrinth in the Bat. N. Iwata.—p. 41.
*Rocky Mountain Spotted Fever. N. Takeuchi.—p. 175.

The Labyrinth in the Bat with Special Regard to Maintenance of Balance.—Iwata contributes a detailed study, in German, of the internal ear in the bat, and summarizes the points in which it differs from the conditions in other animals. Twenty-five plates and seventeen pages of international bibliography are included.

Experimental Rocky Mountain Fever.—Takeuchi's experiments were made on monkeys, guinea-pigs, rabbits and rats. Monkeys were most susceptible to the disease, with symptoms and pathologic anatomy very similar to those in man. One species of micro-organisms of various shapes and sizes (A, B, C, D) was found in the smears and tissue sections, stained purple with Giemsa's stain. The article is in English.

Acta Ophthalmologica, Copenhagen

2 : 1-96, 1924

New Corrected Tonometer Curves. H. Schiøtz.—p. 1.
*Hereditary Color Blindness. G. F. Göthlin.—p. 13.
Refraction in Univitelline Twins. O. Heinonen.—p. 35.
Movements of the Human Eye. P. E. Kroman.—p. 54.
Sequels of Albuminuric Retinitis. E. Holm.—p. 76.
Synechia Without Preceding Inflammation. H. Larsen.—p. 84.
Visual Field During Pregnancy. E. Holm.—p. 92.

Congenital Red-Green Abnormality in Color Vision and Congenital Total Color Blindness.—Göthlin's investigations in seventeen families with 100 color blind members (two of the families with cases of total color blindness), showed that the red-green blindness was inherited according to Wilson's formula for sex-linked inheritance. Typical total color blindness was not inherited according to Wilson's rule, and has not yet been proved to be transmissible to succeeding generations. He regards it as more probably due to some defect or injury of the chromosomes in the mother or father or both parents.

Acta Medica Scandinavica, Stockholm

61 : 295-480 (Jan. 1) 1925

*Oral Administration of Insulin. E. Gjertz.—p. 295.
Diabetic Coma Complicated with Uremia. E. Warburg.—p. 301.
Diabetic Coma with Temporary Return to Normal Tolerance for Carbohydrates. B. Knockaert.—p. 335.
*Calcium Content of Blood in Vegetative Neuroses. E. Kylin.—p. 345.
Neurogenous and Cellular Achylia. E. Thomsen.—p. 377.
*Parathyroid Glands and Epilepsy. A. Bisgaard.—p. 433.
*Serologic Studies of Human Red Corpuscles. S. Hesser. Supplement.—pp. 1-94.

Oral Administration of Insulin.—Gjertz' experiments were made on six patients (fasting), three diabetics, aged 9 to 21, and three, aged 41 to 47, with achylia or hypochylia, two of these diabetic. A marked difference appears between the extreme decrease in the blood sugar due to the ingestion of insulin in the young diabetics, and the slight decrease in the middle-aged patients with abnormal gastric secretion.

Calcium Content of Blood in Vegetative Neuroses.—Kylin's investigations comprised about 200 determinations in 150 subjects. He found that the normal proportion between calcium and potassium is more important for the organism than the absolute concentration of the ions. Other ions and concentrations were not considered in these studies, which, he says, deal with only one phase of a complicated problem.

Parathyroid Glands and Epilepsy.—Bisgaard states that disturbance of the acid-alkali balance occurs with parathyroid insufficiency and is counteracted by parathyroid extract. The parathyroids apparently conform to the requirements formulated by Biedl for classification of a gland in the endocrine system. True epilepsy, postoperative tetany and "tetanoid neuroses" (with disturbed regulation of neutrality—reduced ammonia values) Bisgaard classifies with parathyroid dysfunction. In these conditions, parathyroid extract restores the ammonia values approximately to normal. He believes substitution organotherapy should be pushed more vigorously and longer. The strength of the regulatory mechanism—the parathyroid functional capacity—can be measured by the acid-loading test. The article is in English, and gives twenty-eight pages of the daily findings in six patients and a parathyroidectomized dog.

Serologic Studies of Human Red Corpuscles.—Hesser deals chiefly with the relation of isohemolysis to iso-agglutinations and immune antiserums against erythrocytes. His statistics of blood groups in Sweden, compiled from 533 persons with negative Wassermann reaction, show 36.9 per cent. in Group I; 46.9 per cent., Group II; 9.7 per cent., Group III, and 6.4 per cent., Group IV (Jansky). The same classification is applicable to isohemolysis as well as to iso-agglutination if the corpuscles used have been kept a few days. He adds that it is important in blood grouping to use highly diluted suspensions of the erythrocytes. Isohemolysins and iso-agglutinins are physiologic serum bodies. Only those hemolysins can be considered pathologic which hemolyze corpuscles belonging to the same person or same group or Group I. He found (with Dyke and others) that serums from different persons of the same group vary in agglutinating potency, that the two agglutinins in the same Group I serum may vary in their proportion to each other, and that the corpuscles from different persons of the same group may vary in the ease with which they are agglutinated.

Russkaia Klinika, Moscow

1 : 1-125, 1924

Feeding of Brain Workers in Russia. L. Minor.—p. 5.
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Digestive Leukocytosis.—Gelstein concludes that the onset of digestive leukocytosis depends not only on the motor and secretory function of the stomach and intestine but also on the functional capacity of the bone marrow.

Treatment of Spontaneous Gangrene.—Egoroff reports the results of different methods of treatment in forty-three cases in men. Sympathectomy was followed by recovery in two instances, in one for three years to date. A durable recovery was obtained with diathermy in five cases. Ovary transplantation and ovarian extract induced slight improvement in one patient.

Spastic Ileus.—Solovieff describes a case of spastic occlusion of the bowel in a young man, the second day after a gastro-enterostomy with removal of the pylorus. The excessive intestinal tonus, after the operation, under the effect of the irritation caused by presence of ascarids, may have induced the spasms. The intervention for the spasm showed several segments of the intestines involved. Puncture, with escape of gas from the most distended loop proved successful.